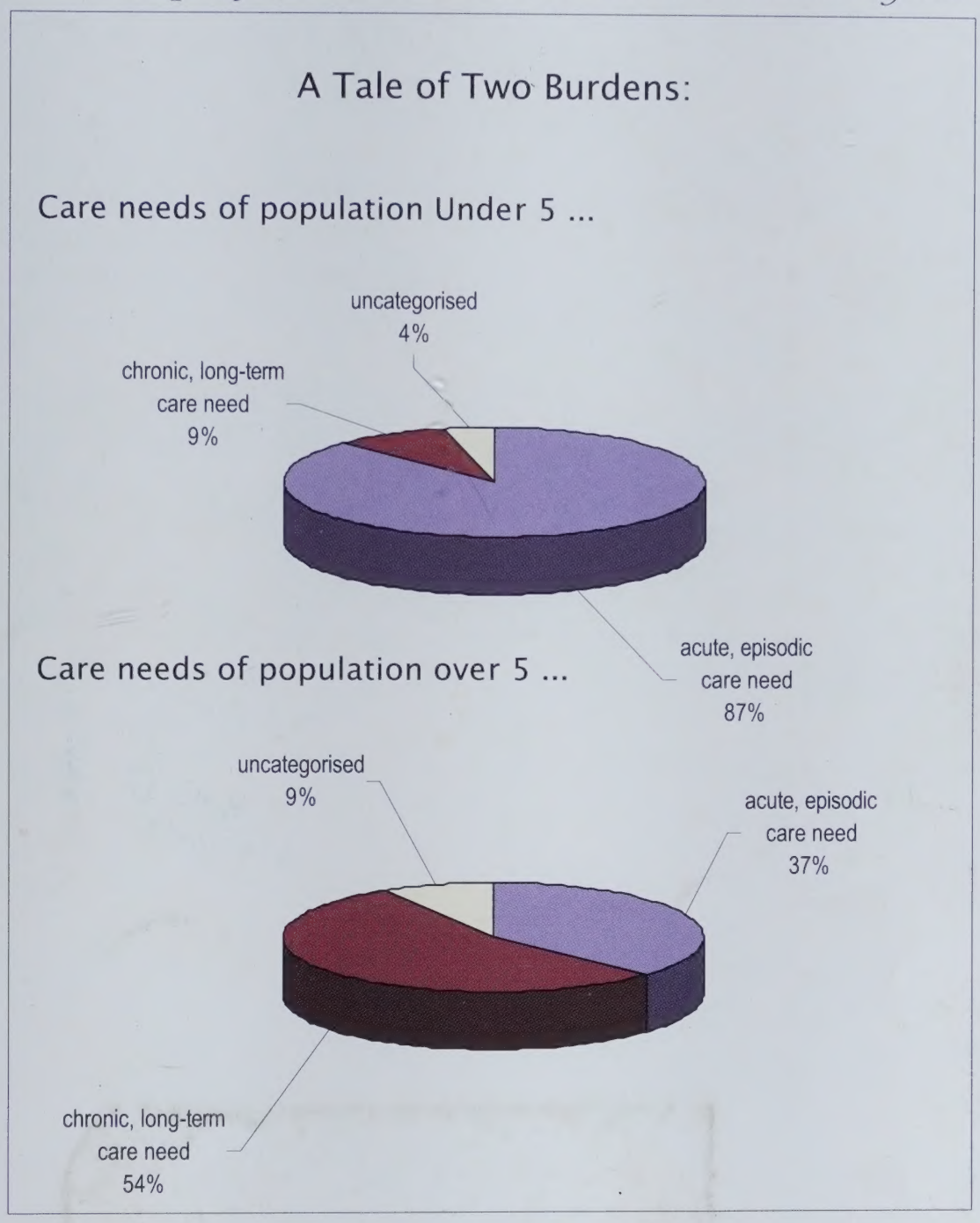
United Republic of Tanzania

Ministry of Health

National Mortality Burden Estimates for 2001

Charts and Graphs from the National Sentinel Surveillance System



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National Mortality Burden Estimates for 2001

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Introduction

What is sentinel surveillance?

This document synthesises the output of the Ministry of Health s National Sentinel System of linked demographic surveillance sites (NSS). The vision of the NSS is to generate and disseminate essential information from sentinel demographic surveillance systems for the equitable development of the Tanzanian people. It will realise this vision by providing representative, longitudinal burden of disease and poverty estimates for informed decisions on policy, planning, monitoring and evaluation at the district, regional and national levels (See Appendix 1: Executive Summary from the National Sentinel Surveillance Strategic Plan).

The purpose of sentinel surveillance is to use data collected in a set of carefully selected sentinel sites to gain an estimate of the extent of the burden of disease and poverty conditions for use in district level planning, and for national policy, planning, monitoring, and evaluation.

Sentinel surveillance is not new in Tanzania. It is a tool used by the Ministry of Health in disease-specific systems such as those for HIV prevalence in women attending antenatal clinics and malaria drug resistance. In agriculture, sentinel sites are used to detect food scarcity and to monitor the prevalence of insect infestations. Now, the surveillance of cause-specific mortality allows the Ministry of Health to estimate the largest portion (about 80%) of the burden of disease.

In implementing the NSS, Tanzania is joining other countries such as China and India where a variety of approaches to sentinel mortality surveillance are used to get a picture about levels and causes of mortality.

Sentinel mortality surveillance in Tanzania has the following characteristics:

- it is very useful in monitoring trends in the prevalence of important diseases (e.g. HIV/AIDS)
- it simplifies national data collection related to specific diseases
- it can provide reliable estimates for small geographic areas and so reveals the diversity of health conditions in Tanzania
- it complements facility-based information from sources like the Health Management Information System (HMIS)
- it furnishes information that vital registration is currently unable to provide
- it is more cost-effective and feasible than carrying out a series of nationally representative surveys
- it avoids the need to establish surveillance in all parts of the country, which would be prohibitively expensive
- it can be used to validate information previously collected by other information systems

Information from sentinel sites of the NSS can be used in a variety of ways. At the **district level**, Council Health Management Teams can use district mortality burden profiles from the sentinel sites that they most closely resemble to aid in the annual planning process.

At the **national level**, data from different sites can be compared and contrasted to show the diversity in health and poverty conditions in the Tanzanian population. Sentinel data can also be pooled to make broad national estimates of Tanzania s disease burden. This pooling of sentinel surveillance data is new for Tanzania, and will benefit from the input of many stakeholders, and from cross-comparison (where possible) with other sources of national estimation such as the national census and Demographic and Health Surveys.

Under the leadership of the Ministry of Health, a consensus will be reached as to the proper methods and assumptions to apply in the estimation procedures, and strengths and limitations of the NSS national burden of disease estimates.

Purpose of this Document

This report presents several aspects of the burden of disease by using simple charts and graphs and a minimum of explanatory text. It is intended for use by the Ministry of Health in its annual assessment of sectoral performance, and to aid in the assessment of broad priorities for health care and interventions in the country. This document is an output of the Adult Morbidity and Mortality Project, Phase-2 (AMMP-2)[1] and is an adaptation of profiles developed for use at the District level by the Tanzania Essential Health Interventions Project (TEHIP)[2] and AMMP-2.

The national estimates in this profile are based upon data from the demographic and mortality surveillance systems operated by the NSS in partnership with the Local Councils of Hai and Morogoro, and the Municipalities of Ilala and Temeke. Data are for 2001. Although sentinel site data has been used for many years by the Ministry of Health and by some districts, this is the first attempt to pool the data into a single profile of national estimates. The profile will be updated annually. Additional content will be added, and methods will be improved. Future estimates will include data from additional districts under the NSS, including Igunga and Kigoma urban, as well from NSS partners including the Ifakara Health Development and Research Centre, the DSS at TANESA, the Rufiji Demographic Surveillance System.

One of the targets of Health reforms in Tanzania is to increase health equity. In all societies, the poor carry the heaviest burden of disease. While it may be difficult for health systems to accurately target the poor, it is possible to target major components of the Burden of Disease. This, in turn, increases equity in resource allocation and is likely to benefit the poor in particular.

At a national level this means focussing on cost-effective interventions that address the largest shares of the burden of disease. It also means using models of care that reflect the burden of disease. In Africa, it is estimated that 80% of the burden of disease[3] comes from premature mortality. The causes of this mortality also cause most of the disability that makes up the remaining 20% of the disease burden.

Mortality, therefore, serves as a good starting point to setting priorities. Since most mortality occurs at home or outside of health facilities, we cannot rely on attendance data from the health facility-based Health Management Information System alone as

the source of information on the burden experienced by communities and households. Instead we need to use demographic and mortality surveillance data from the community for understanding the real burden in various parts of the country.

We hope that this report stimulates much discussion and constructive criticism that will improve future editions. Despite its limitations, it is an attempt to maximise the usefulness of the Ministry of Health s unique resource the demographic surveillance sites that are present in the country.

Above all, the report should inform policy and action in addressing the burden of disease facing Tanzania today.

Some limitations of the first set of national estimates from the NSS

It should be understood from the outset that the charts and graphs for Tanzania s burden of disease in this document are **estimates**, and must therefore be interpreted with certain issues in mind. First, they are based upon information from three demographic surveillance sites. Although these sites are not a random sample of districts in Tanzania, the data from which they are derived come from more than 400,000 Tanzanians who have been followed up for nine years. The data are recognised internationally as being of high quality and unique value. In fact, earlier results from these sites were used as a main source for making burden of disease estimates for certain causes for all of sub-Saharan Africa (in the *Global Burden of Disease 1990* study).

Second, it should be borne in mind that these estimates are based solely on **mortality**. In sub-Saharan Africa it is thought that mortality accounts for 80% of the total burden of disease. Using cause-specific mortality is therefore a good starting point for policy and planning. Information about highly disabling or stigmatising non-fatal conditions that affect many Tanzanians, however, is not available at this time and so is not included in this edition of the national estimates. These causes range from mental health conditions like depression and schizophrenia, to non-fatal injuries, and reproductive health problems such as infertility caused by sexually transmitted infections and obstetric injuries.

Third, using data from these three sites to make national estimates requires making some broad assumptions. In the **Appendices** we have listed our assumptions in detail. Comments are welcome and should be addressed to the parties identified on page 28. The more stakeholders who participate in creating the estimates, the more they will reflect the needs of the primary audiences in Tanzania who urgently need reliable information for making policy and setting priorities.

Structure of the document

Part 1: The Burden of Disease and Need for Care estimates the years of life lost in Tanzania due to illness and death, and introduces a new way of thinking about the

burden of disease for Tanzania. In these figures, the burden of disease is broken down by causes of death that fall into two groups:

- **Acute or episodic care needed:** the proportion of deaths due to causes that are life-threatening and require acute or episodic care from the health system within one month of falling ill (many infectious causes of disease such as malaria, acute respiratory infection, and diarrhoea fall into this category).
- **Long-term care or management needed**: the proportion of deaths from conditions that are highly fatal and highly likely to cause death if proper care or management is not delivered and maintained (some important infectious conditions such as HIV/AIDS and tuberculosis fall into this category, as do diseases such as hypertension and diabetes).

Preventive services and interventions cut across both categories. Prevention can reduce both the numbers of deaths from conditions needing acute care (e.g. malaria prevention through the use of **Insecticide Treated Nets** (**ITNs**)) as well as those caused by more chronic illness (e.g. AIDS prevention through **condom promotion and use**).

Part 2: Intervention Addressable Burden of Disease shows the intervention addressable shares of the total burden of disease and present this in a pictorial format as follows:

- By cost-effective interventions available to CHMT s and rural district health services;
- By individual conditions addressed by each of nine cost-effective intervention strategies.

This information is essential for identifying the most important health intervention priorities (as opposed to disease priorities) and in allocating appropriate and proportionate resources for the support of selected interventions at district level.

Part 3 presents some additional figures related to survival and health facility use.

The Appendices contain detailed information about the various methods and assumptions used to make the national estimates. The estimates in this profile are open source. The usefulness and accuracy of this tool can only be achieved through scrutiny and through contributions of all stakeholders to challenging and improving the methods and assumptions.

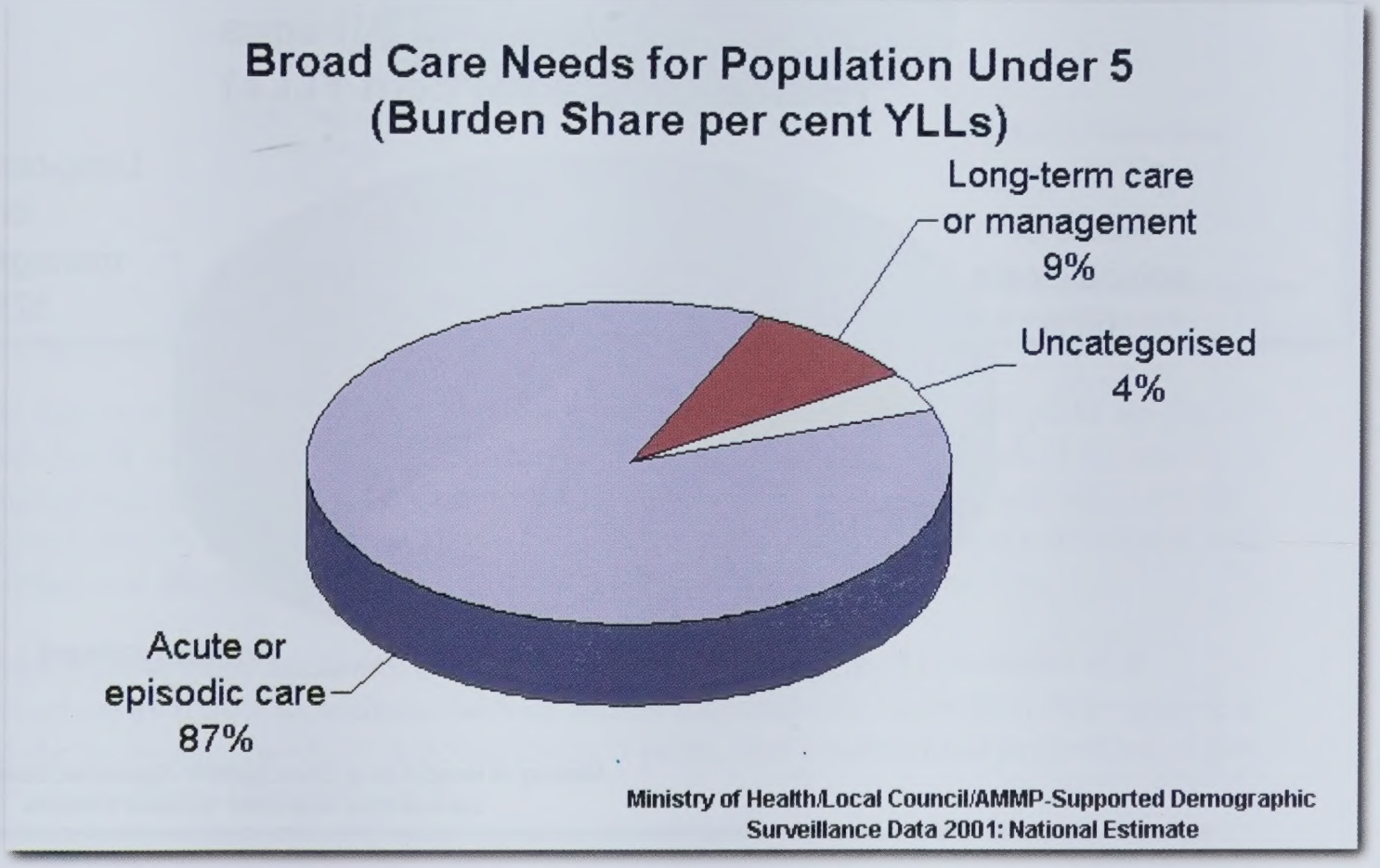
Part 1: The Burden of Disease and Need for Care in Tanzania

The Burden of Disease in Tanzania

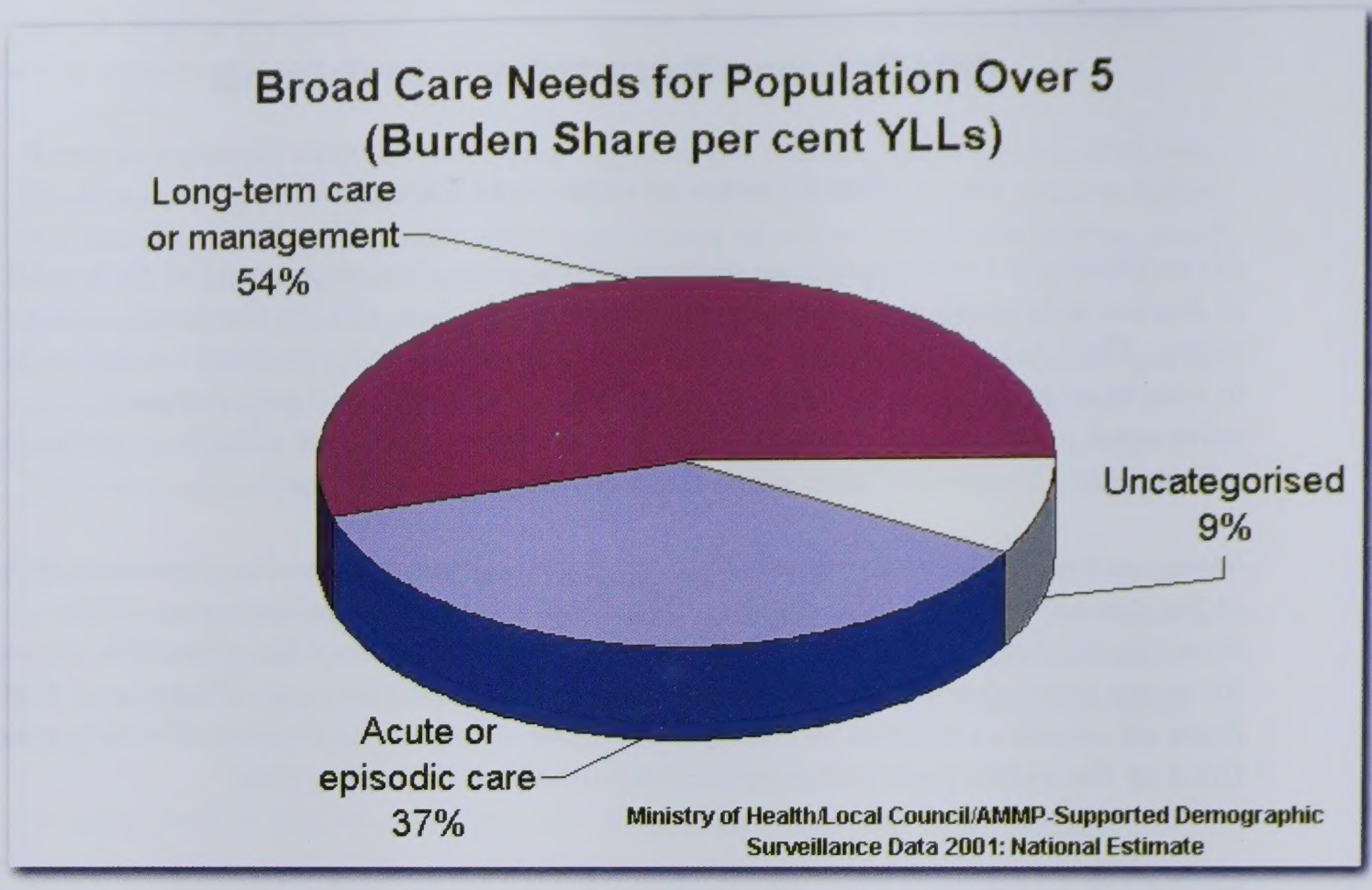
An increasingly common way of measuring the mortality component of the burden of disease is to make an estimate of the **years of life lost** (YLLs) due to all causes of death. The Global Burden of Disease 1990 study developed a method for doing this. In simple terms, the age at death for each person who dies in a population is subtracted from a standard life expectancy. These numbers are added up (with some adjustments) to give the total years of life lost for the population.[4]

Based on the YLL rates for the sentinel sites, and assuming that this represents 80% of the disease burden, it is estimated that Tanzania loses 10 million years of life annually through illness and death. This amounts to four months of lost life per year for every man, woman and child in the country. Put another way, **illness and death from all causes combined is estimated to wipe out the contribution of nearly one-third of the entire population to national development every year**.

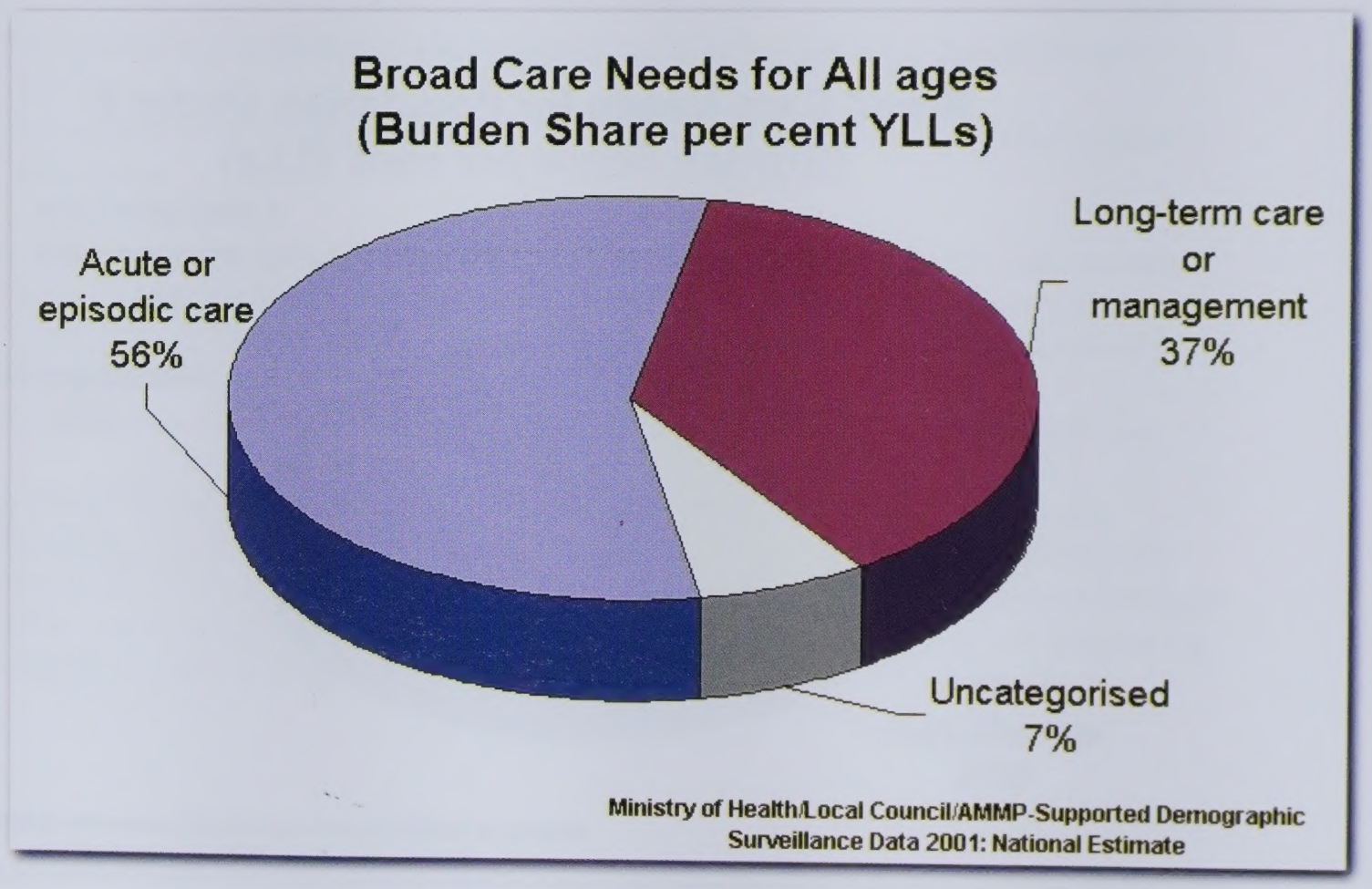
Figures 1a-c. Broad needs for Care in the Tanzanian Population


Broad Care Needs for Population Under 5
(Burden Share per cent YLLs)
Long-term care or management 9%
Uncategorised 4%
Acute or episodic care 87%
Ministry of Health/Local Council/AMMP-Supported Demographic Surveillance Data 2001: National Estimate

(1a)


Broad Care Needs for Population Over 5
(Burden Share per cent YLLs)
Long-term care or management 54%
Uncategorised 9%
Acute or episodic care 37%
Ministry of Health/Local Council/AMMP-Supported Demographic Surveillance Data 2001: National Estimate

(1b)


Broad Care Needs for All ages
(Burden Share per cent YLLs)
Acute or episodic care 56%
Long-term care or management 37%
Uncategorised 7%
Ministry of Health/Local Council/AMMP-Supported Demographic Surveillance Data 2001: National Estimate

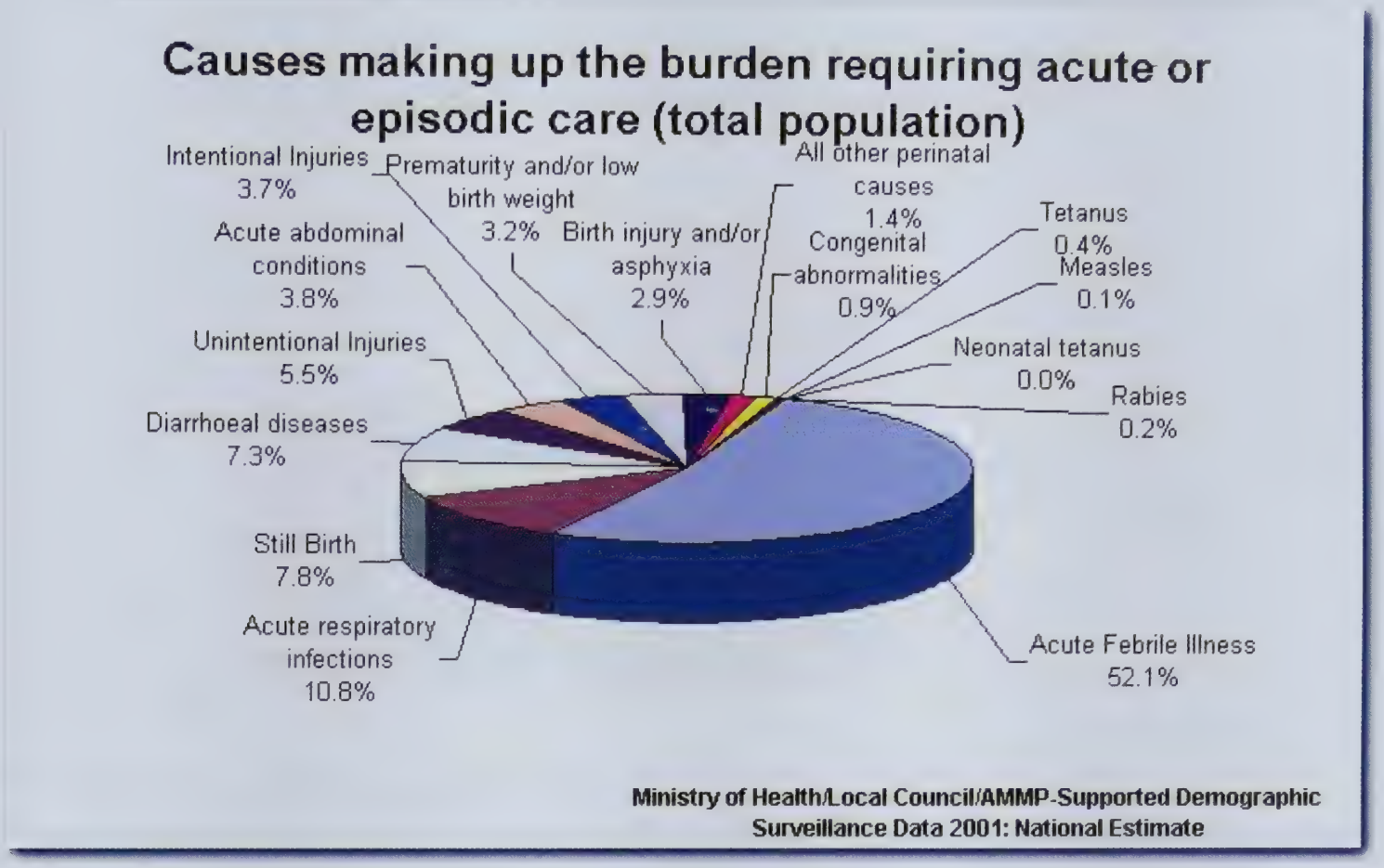
(1c)

When prevention fails, strikingly different pictures emerge for adults and children if the burden of disease is examined in terms of the health effects on individuals, communities, and the health system. Figure 1a shows that an estimated 87% of Tanzania s children die from causes that require a rapid response from the health care system. By contrast, among older children, adolescents, adults, and the elderly

(Figure 1b), the majority (54%) are thought to die from causes that require care and management lasting one month or longer.

Looking at the whole population in Figure 1c, roughly 60% of deaths in 2001 are estimated to have been addressable by acute or episodic care, and about 40% by long-term care and management. (About 7% of the burden could not be easily classified into either the acute/episodic or the chronic/long-term group.)

Figure 2. Cause components of the acute health-needs burden


Causes making up the burden requiring acute or episodic care (total population)
Intentional Injuries 3.7%
Prematurity and/or low birth weight 3.2%
Birth injury and/or asphyxia 2.9%
All other perinatal causes 1.4%
Congenital abnormalities 0.9%
Tetanus 0.4%
Measles 0.1%
Neonatal tetanus 0.0%
Rabies 0.2%
Acute abdominal conditions 3.8%
Unintentional Injuries 5.5%
Diarrhoeal diseases 7.3%
Still Birth 7.8%
Acute respiratory infections 10.8%
Acute Febrile Illness 52.1%
Ministry of Health/Local Council/AMMP-Supported Demographic Surveillance Data 2001: National Estimate

As can be seen from Figure 2, there are many component causes that make up the burden of acute care need in Tanzania. Over half (52%) of the years of life lost in this group, however, are accounted for by one narrow group of causes: acute febrile illness (which is primarily malaria). Taken together, acute respiratory infections, still births, and diarrhoeal diseases account for another 25% of this burden.

Fortunately, there are many cost-effective interventions (both preventive and curative) available to address the four causes that make up more than three-quarters of the acute-care needs of children under 5 years, and a substantial proportion of the needs of others. These include:

Preventive:

- **Use of insecticide treated bednets (ITN)**
- **Intermittent Presumptive Treatment of Malaria during Pregnancy (IPT)**
- **Provision of proper ante-natal and delivery care to pregnant women**
- **Access to clean and safe water, and proper household and community sanitation**
- **Road traffic safety measures**

When prevention is unsuccessful, curative interventions include:

- **Proper delivery of services and drugs from the Essential Drugs Program (EDP), including the Integrated Management of Childhood Illnesses (IMCI)**
- **Access to emergency obstetric care and referral during pregnancy**
- **Oral Rehydration Solution (ORS)**

Figure 3. Cause components of the burden for long-term care and management needs

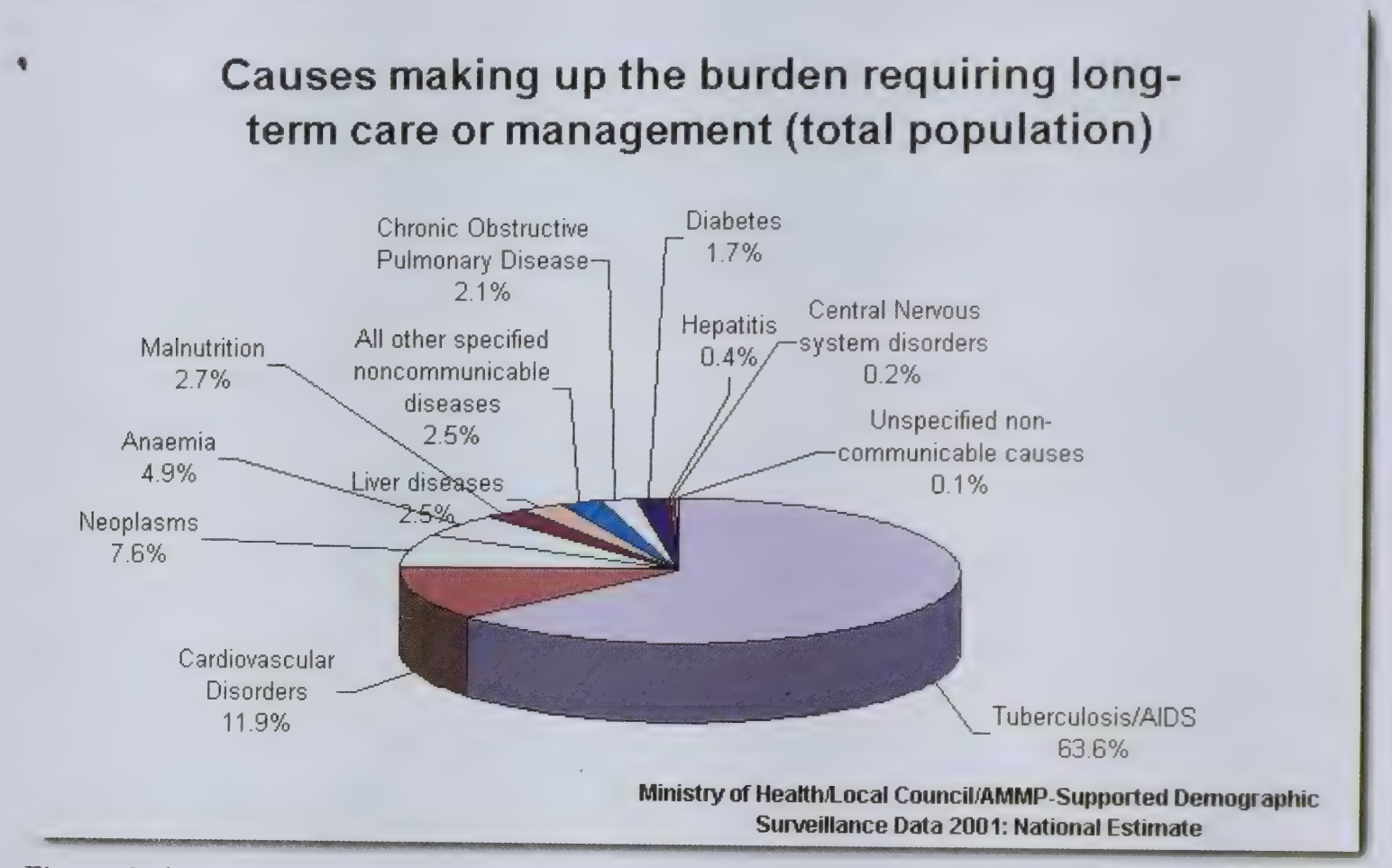

Causes making up the burden requiring long-term care or management (total population)
Chronic Obstructive Pulmonary Disease 2.1%
Diabetes 1.7%
Malnutrition 2.7%
All other specified noncommunicable diseases 2.5%
Hepatitis 0.4%
Central Nervous system disorders 0.2%
Anaemia 4.9%
Unspecified non-communicable causes 0.1%
Liver diseases 2.5%
Neoplasms 7.6%
Cardiovascular Disorders 11.9%
Tuberculosis/AIDS 63.6%
Ministry of Health/Local Council/AMMP-Supported Demographic Surveillance Data 2001: National Estimate

Figure 3 shows that the conditions making up the burden of disease that requires long-term care and management are also numerous, but also dominated by a small group of causes. Tuberculosis and AIDS, which are frequently present together, account for over 63% of the estimated years of life lost to those who need chronic care. Taken together, cardiovascular disorders, cancers, and anaemia account for another 25% of the burden share requiring long-term services.

Again, there are many interventions that are both cost-effective and widely available to address these causes. They include:

Preventive:

- **proven techniques for AIDS education and Behavior Change**
- **voluntary testing and counseling**
- **condom promotion and use**
- **Neverapine to prevent of maternal to child transmission of HIV**
- **ensuring the safety of the blood supply**
- **tobacco control measures**
- **promoting proper diet and exercise**
- **prevention of alcohol abuse**

Cure and management:

- **home-based care and management of secondary infections for people living with AIDS**
- **syndromic management of STDs**
- **directly observed therapy for tuberculosis (TB-DOTs)**
- **early detection and management of hypertension**
- **proper treatment of infections and conditions associated with anaemia through EDP kits and associated services, and improved nutrition**

Figure 4. Total Mortality Burden by Age Group

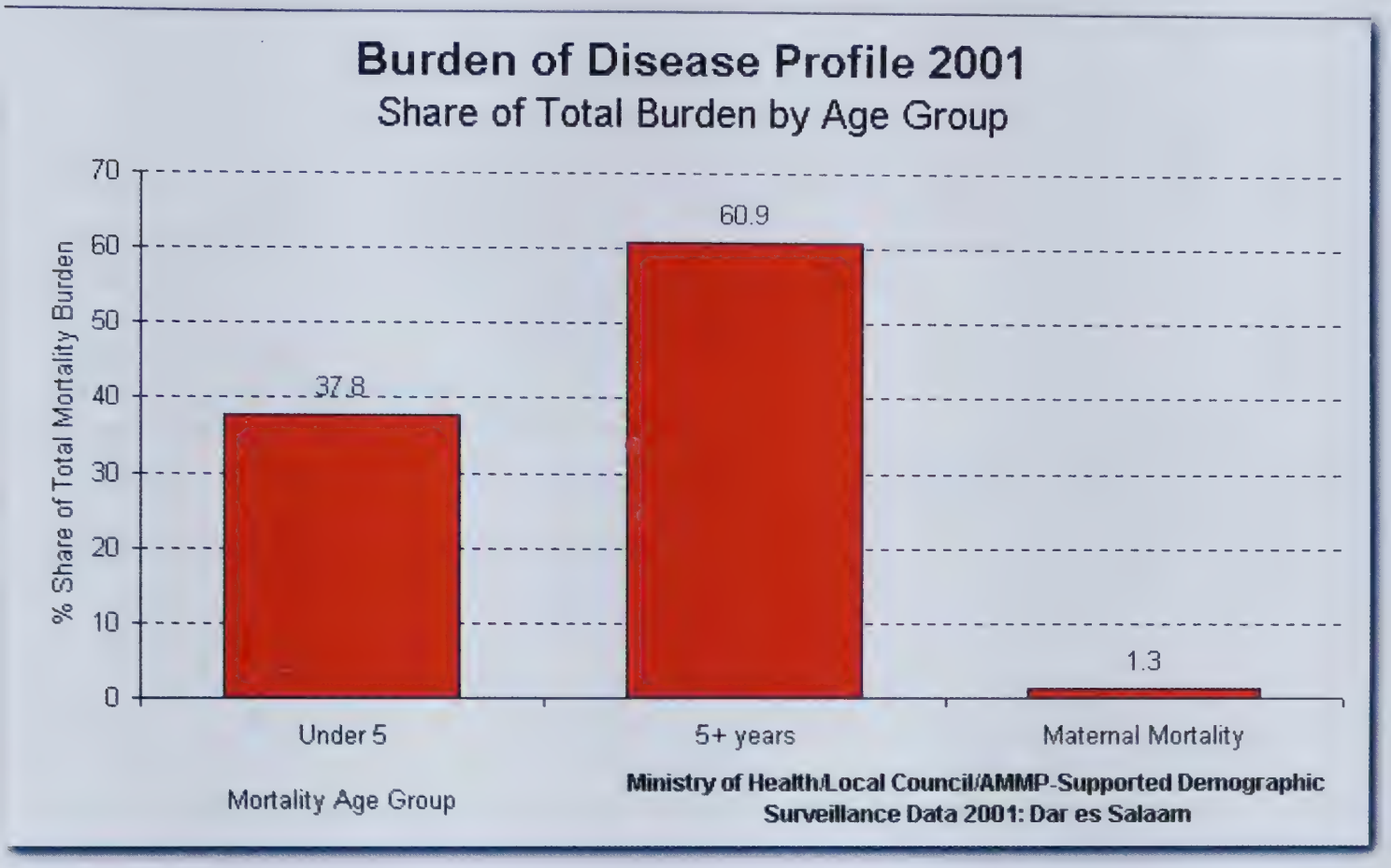


Figure 4 above shows that an estimated 38% of the total burden of disease in the Tanzanian population is experienced during the first five years of life. For perspective, the proportion of years of life lost due to maternal causes is also provided. Although the burden of maternal mortality is relatively small, the maternal mortality in Tanzania is still extremely high by international standards, and requires continued attention.

Figure 5. Per Capita Mortality Burden by Age Group

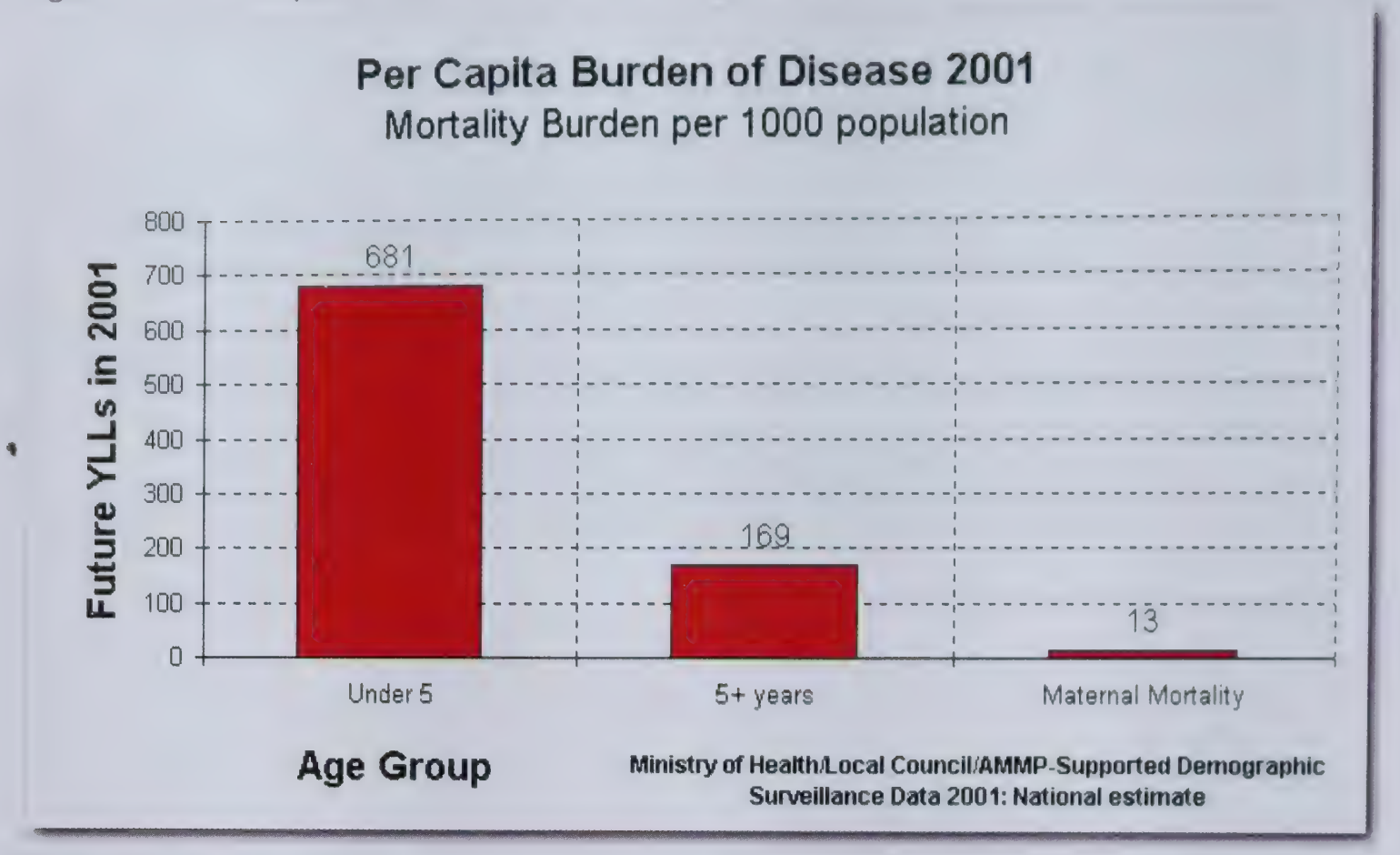
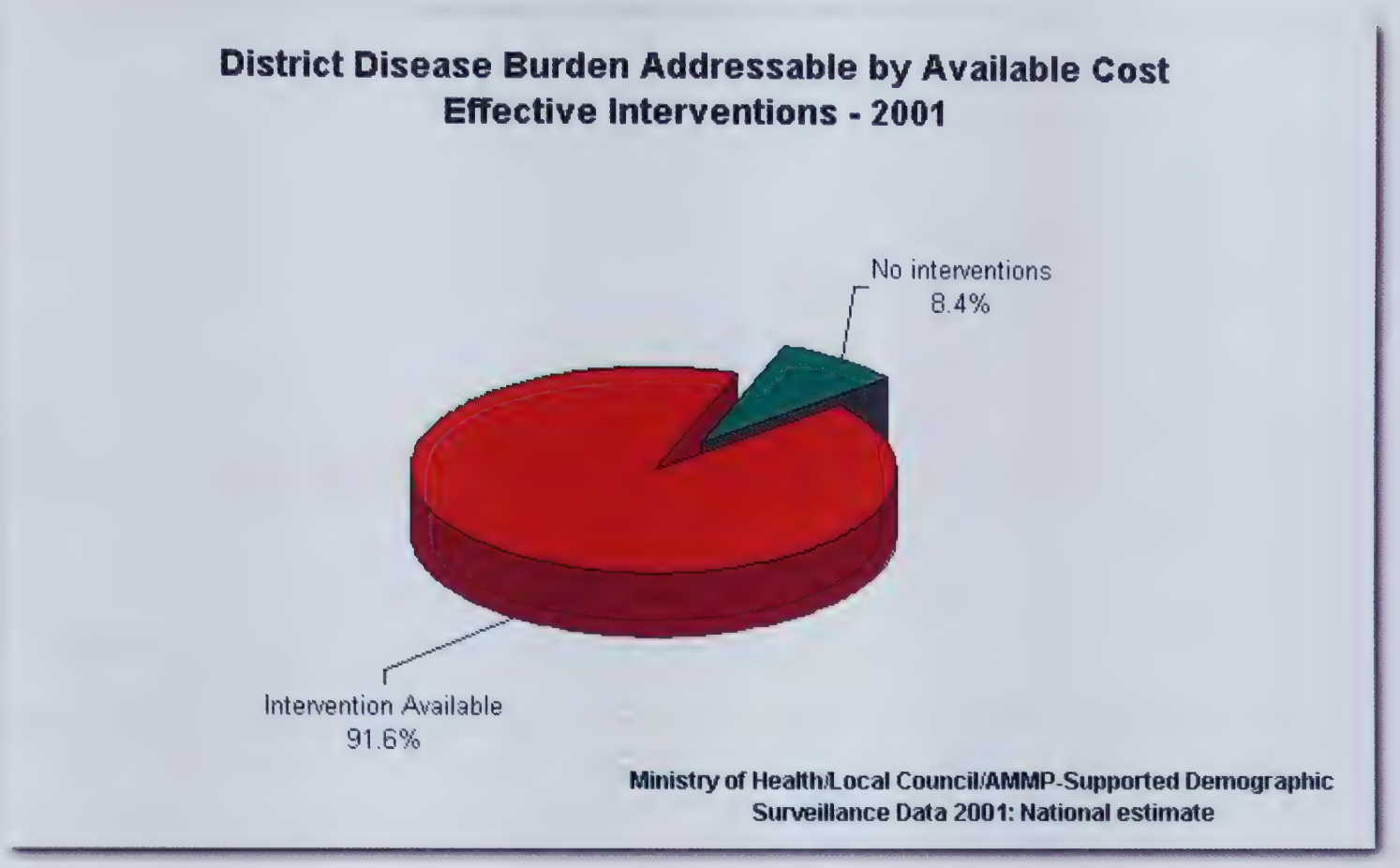


Figure 5 shows that children carry a disproportionately high burden of mortality. Since the two age groups (under-five and over-five) are of unequal size, this graph shows the burden of disease on a per capita basis. The under-fives represent only about 16% of the population, yet they carry about 38% of the disease burden measured in YLLs. The over-five age group spans the remainder of the life course years and includes about 84% of the population. Yet the population in this age group carries 68% of the burden. The per capita shares represent the relative risk of burden of disease for those in each age category. The rate ratio of under-five to over-five mortality is over 4, meaning that the mortality rate is nearly three times higher among children. On one hand, under-five mortality clearly demands high priority; on the other, the population over five carries the majority of the burden.

Part 2. Intervention Addressable Burden of Diseases Graphics

Figure 6. Disease Burden Addressable by Available Cost-Effective Interventions


District Disease Burden Addressable by Available Cost Effective Interventions - 2001
No interventions
8.4%
Intervention Available
91.6%
Ministry of Health/Local Council/AMMP-Supported Demographic Surveillance Data 2001: National estimate

Although it is not possible to prevent *all* premature mortality, Figure 6 shows that 92% of the estimated year 2001 disease burden can be *addressed* by the type of cost effective interventions that are available to Council Health Management Teams and supported by Council Health Plans. As new cost-effective interventions become available for the 8% of the burden for which there are no easily available interventions, these can also be considered for inclusion in the National Package of Essential Health Interventions. (Also see sections on Selecting From the National Package of Essential Health Interventions and Additional Information Needed for Priority Setting .)

Figure 7. Intervention Addressable Shares of the Burden of Disease

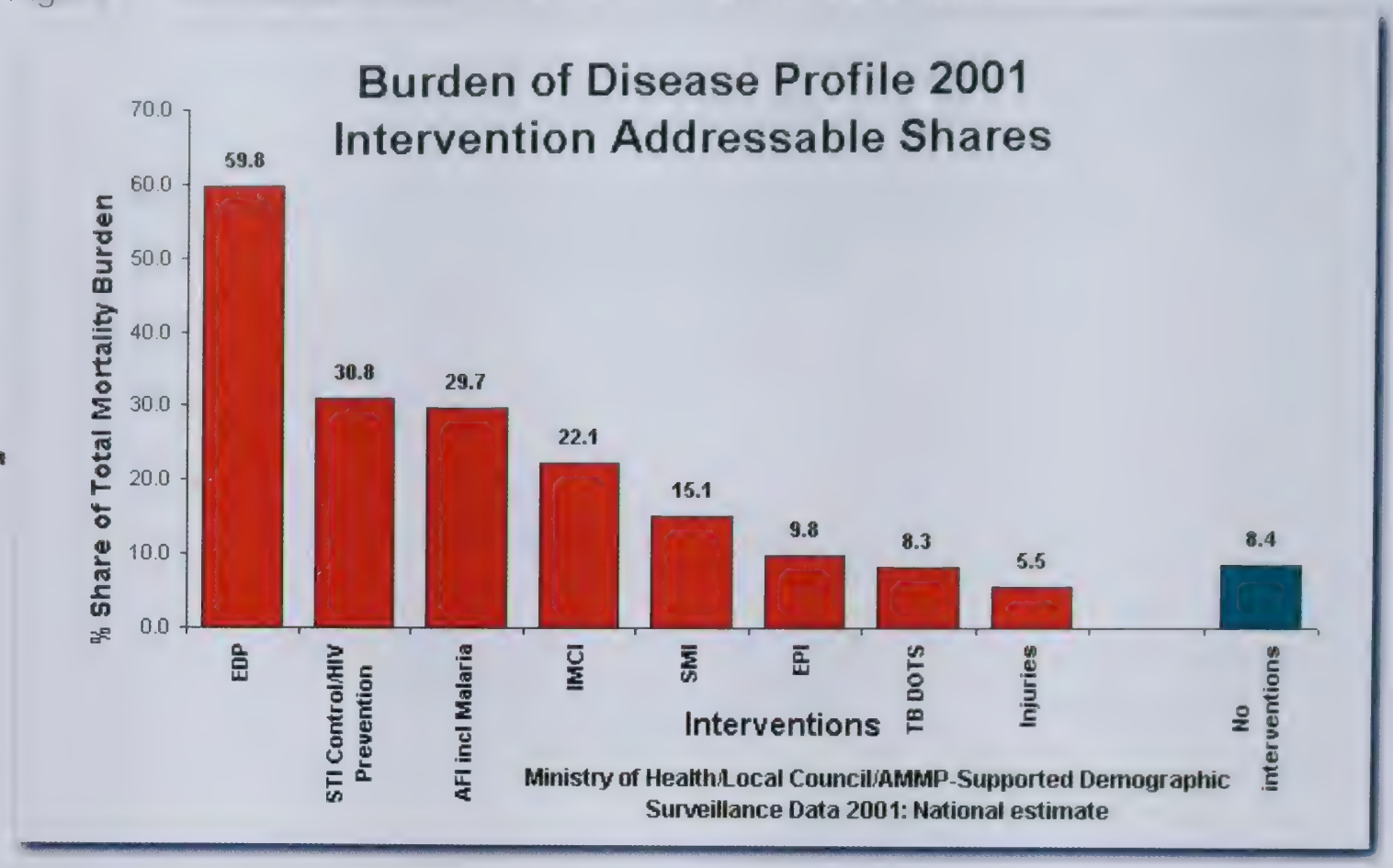


Figure 7 shows how much of the total burden of disease is addressed by selected essential health intervention strategies currently available to Districts in Tanzania. We include all interventions that address at least 2% of the burden of disease and that are considered cost effective.

Causes of death can be addressed by more than one intervention or intervention package. For example, the causes of death addressed by the IMCI package are also addressed by the drugs and services associated with the EDP kit. Therefore the burden shares for interventions listed in Figure 7 total to more than 100%.

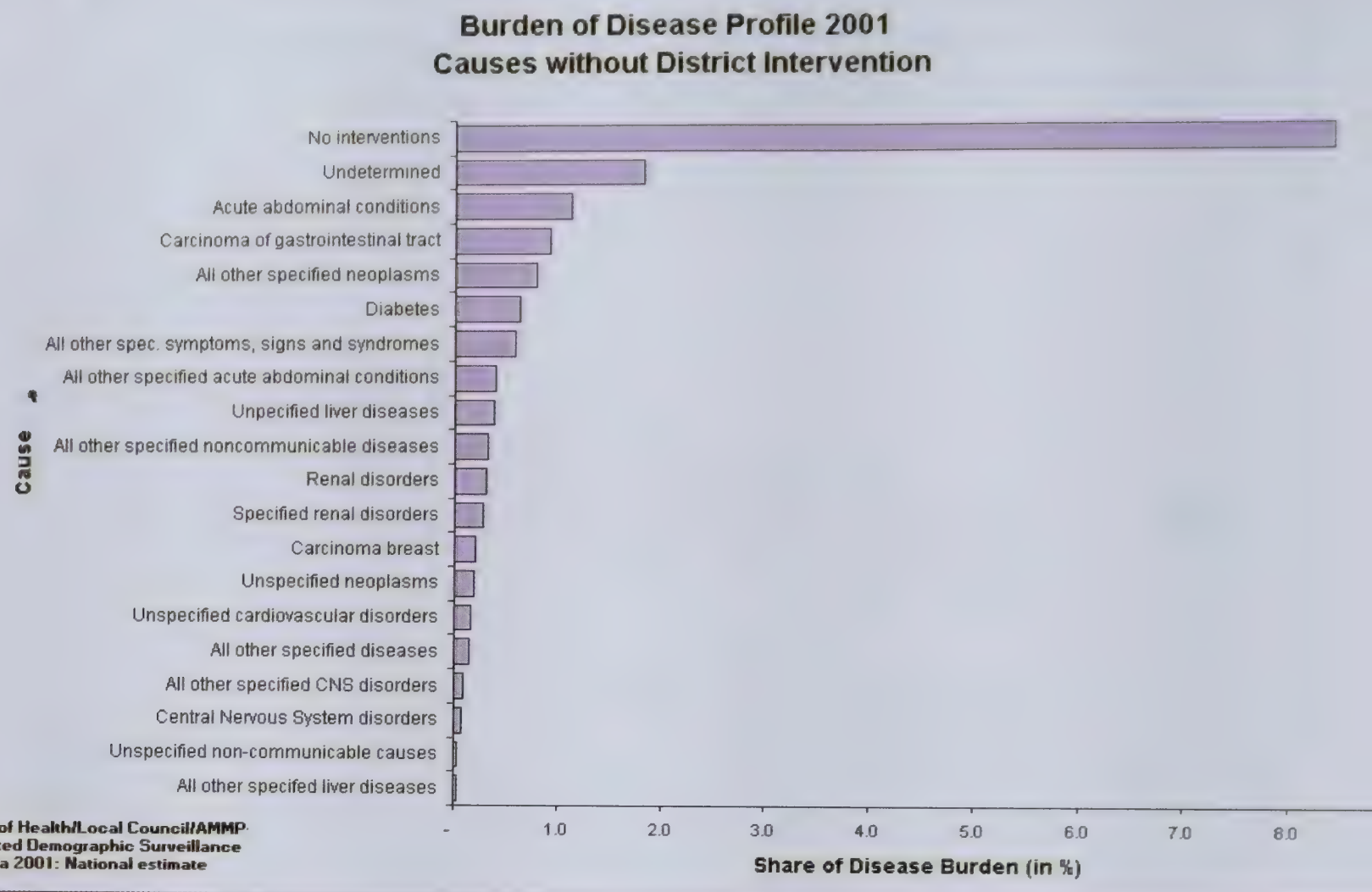
Taken together, these might represent a minimum package for such districts. These interventions include:

- **Essential Drug Program (EDP)**
- **Sexually Transmitted Infection (STI) control and HIV Prevention including condom promotion**
- **Case management and prevention for acute febrile illnesses (AFI) including malaria**
- **Insecticide Treated Nets (ITNs) for prevention of malaria**
- **Intermittent Presumptive Therapy (IPT) for Malaria in Pregnancy**
- **Safe Motherhood Initiative (SMI)**
- **Integrated Management of Childhood Illnesses (IMCI)**
- **Injury Care and Prevention**
- **Expanded Program on Immunisation (EPI)**
- **TB Directly Observed Therapy (TB DOTS)**
- **Health Information, Education and Communication**

It is important to bear in mind that interventions for *non-fatal* conditions of public health importance should also be included. In addition, it may be useful to include highly cost-effective interventions for conditions that are not common.

Since some diseases are addressed by more than one intervention package, these shares are not intended to be additive. The category labeled *No Intervention* (8%) contains disease burden not addressable by cost-effective essential health interventions.

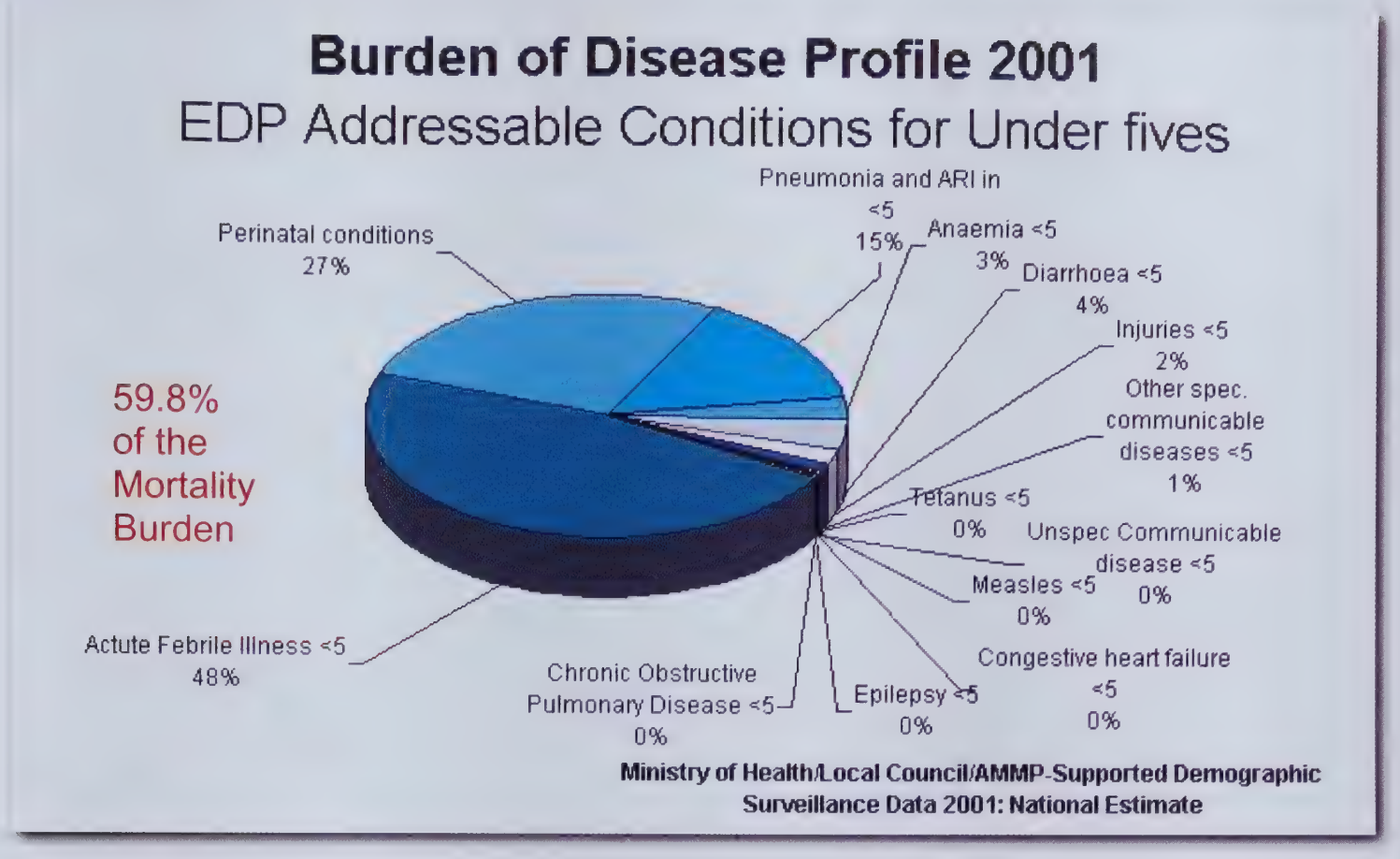
Figure 8. Causes without District Intervention



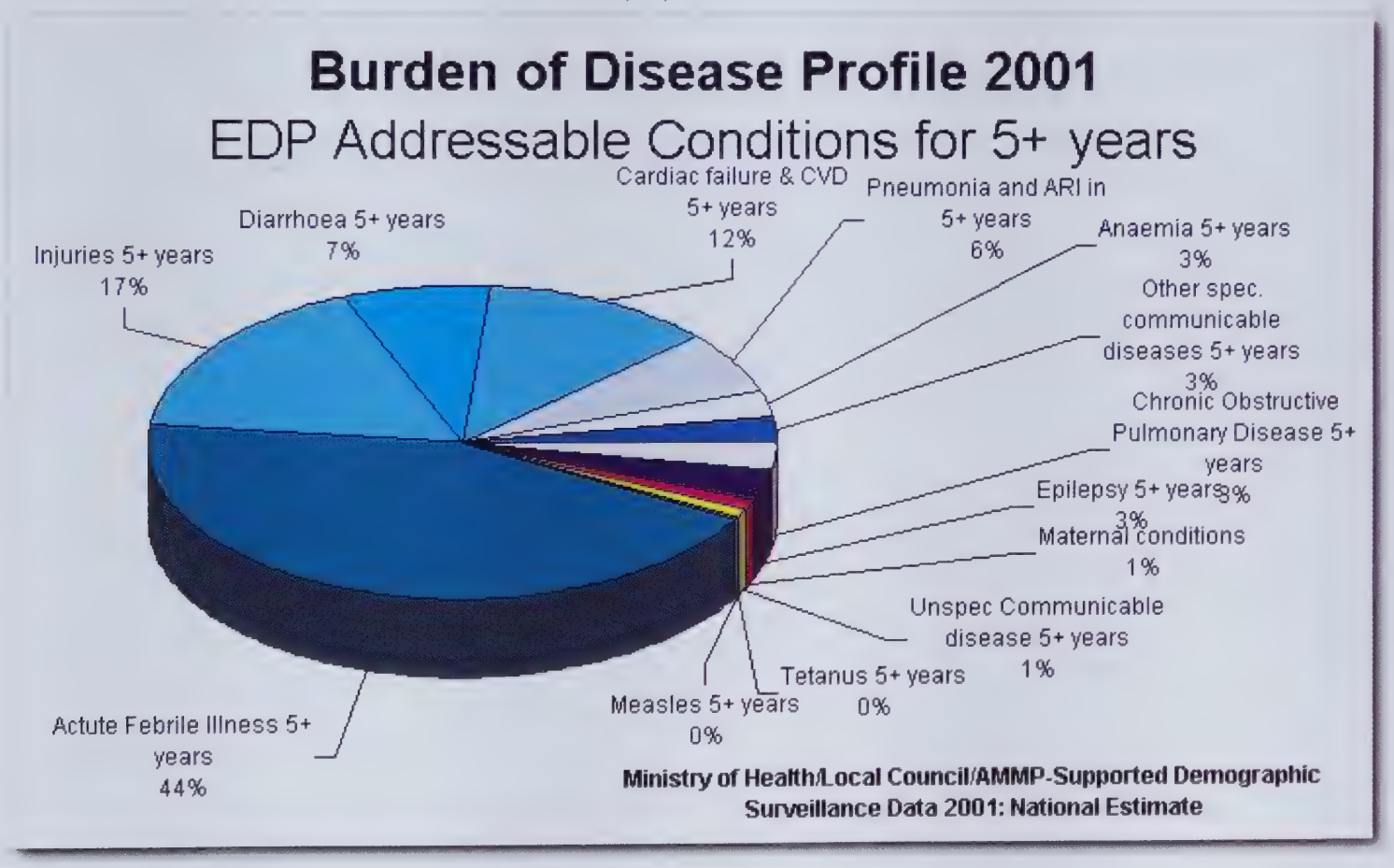
The causes of death that make up the 8% share currently not yet addressable by cost-effective essential health interventions at rural level are shown in above in Figure 8.

While interventions do exist for diabetes, the cost effectiveness of diabetes care in the Tanzanian setting remains unknown. Most of these causes individually constitute less than 1% of the total burden of disease in the population and will be difficult to address cost-effectively. Interventions for non-communicable diseases will become increasingly important in Tanzania as acute care services improve and as the burden of infectious diseases is addressed.

Figures 9a & b. EDP Addressable Conditions


Burden of Disease Profile 2001
EDP Addressable Conditions for Under fives
59.8% of the Mortality Burden
Pneumonia and ARI in <5 15%
Anaemia <5 3%
Diarrhoea <5 4%
Injuries <5 2%
Other spec. communicable diseases <5 1%
Unspec Communicable disease <5 0%
Congestive heart failure <5 0%
Epilepsy <5 0%
Chronic Obstructive Pulmonary Disease <5 0%
Measles <5 0%
Tetanus <5 0%
Perinatal conditions 27%
Actute Febrile Illness <5 48%
Ministry of Health/Local Council/AMMP-Supported Demographic Surveillance Data 2001: National Estimate

(9a)


Burden of Disease Profile 2001
EDP Addressable Conditions for 5+ years
Cardiac failure & CVD 5+ years 12%
Pneumonia and ARI in 5+ years 6%
Anaemia 5+ years 3%
Other spec. communicable diseases 5+ years 3%
Chronic Obstructive Pulmonary Disease 5+ years 3%
Epilepsy 5+ years 3%
Maternal conditions 1%
Unspec Communicable disease 5+ years 1%
Tetanus 5+ years 0%
Measles 5+ years 0%
Diarrhoea 5+ years 7%
Injuries 5+ years 17%
Actute Febrile Illness 5+ years 44%
Ministry of Health/Local Council/AMMP-Supported Demographic Surveillance Data 2001: National Estimate

(9b)

Figures 9a & b above show the component causes of the 60% of the total mortality-based burden of disease addressable by **Essential Drugs Program (EDP) kits and associated services**. Contents of EDP kits are used extensively for essential health interventions covered elsewhere in this document (e.g. IMCI, Malaria, SMI, Injury

Care, etc.). The remainder of the EDP kit also contains drugs and materials important for care of many other conditions.

Figure 10. STI Control and HIV & AIDS Prevention Addressable Conditions

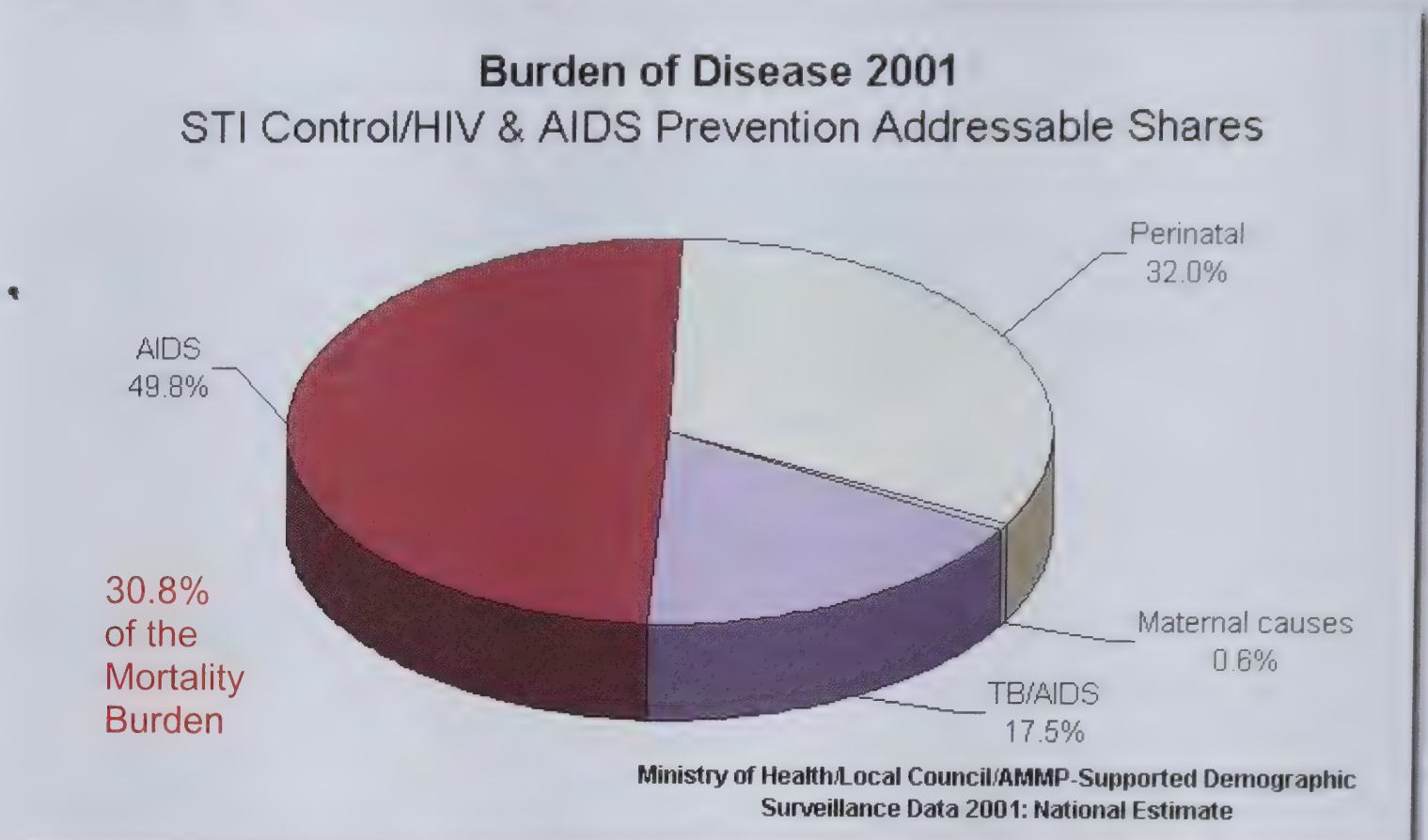
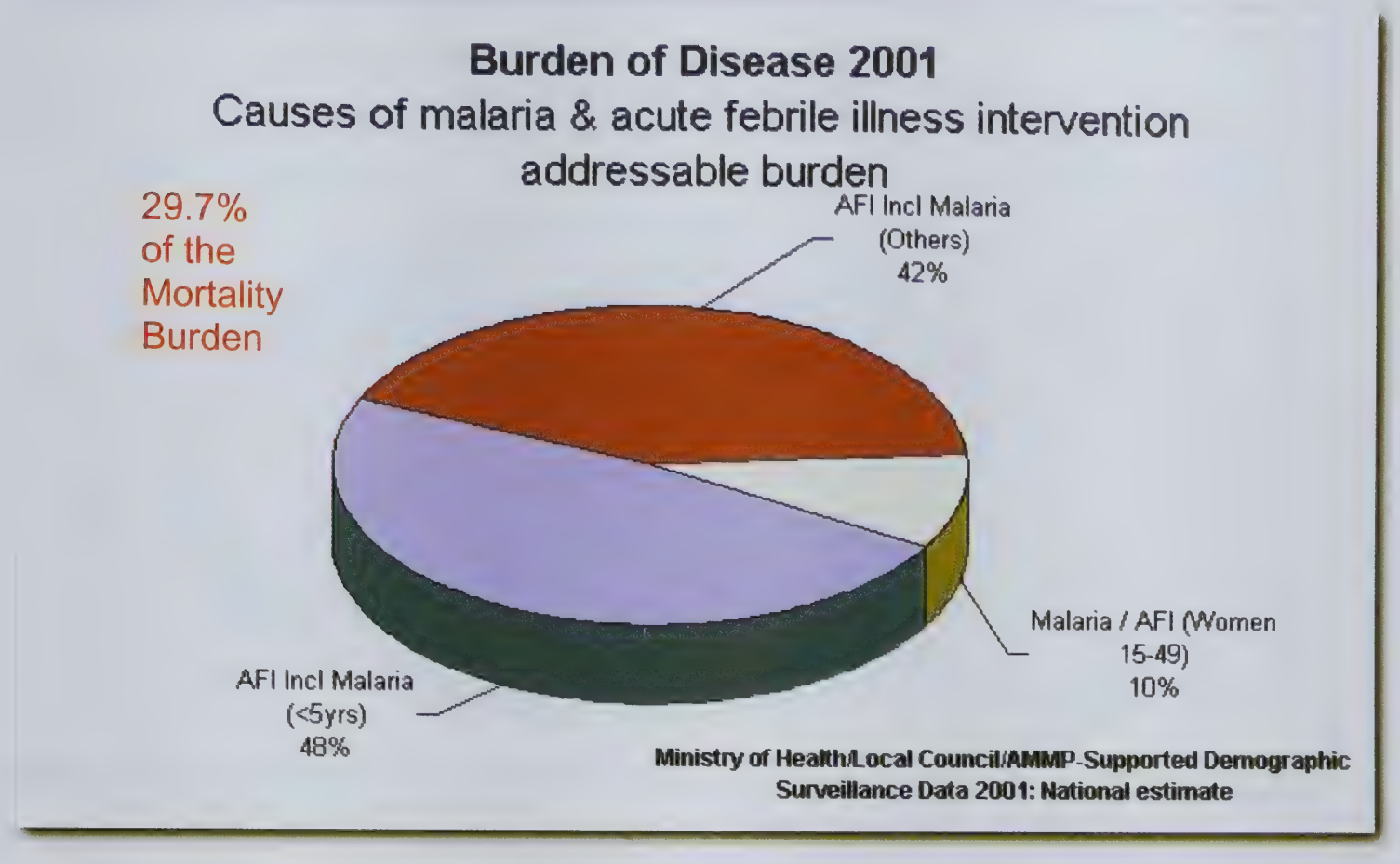


Figure 10 illustrates that HIV infection and AIDS (with or without TB) cause the majority of the mortality that can be attributed, in whole or in part, to sexually transmitted disease. Referring back to Figure 6, it is estimated that 31% of the total disease burden in 2001 can be addressed by **HIV Prevention and Reproductive Health Measures**, and the **Syndromic Treatment of STIs**. Untreated STIs lead to increased risk of HIV transmission and to increased risk of perinatal and maternal mortality.

Figure 11. Malaria and Acute Febrile Illness Addressable Conditions


Burden of Disease 2001
Causes of malaria & acute febrile illness intervention addressable burden
29.7% of the Mortality Burden
AFI Incl Malaria (Others) 42%
Malaria / AFI (Women 15-49) 10%
AFI Incl Malaria (<5yrs) 48%
Ministry of Health/Local Council/AMMP-Supported Demographic Surveillance Data 2001: National estimate

As Figure 11 indicates, the burden of disease in Tanzania addressable by interventions aimed at acute febrile illness is disproportionately borne by children under 5 (48%). The other important risk group is women of reproductive age who suffer about 10% of the malaria burden. Older children, youth, men, and older women bear nearly half the burden. This illustrates the importance of prompt and effective **Malaria Case Management with effective antimalarial drug regimes** according to the new National Guidelines, and preventive interventions such as **Insecticide Treated Nets (ITNs)**, especially for mothers and young children, and **Intermittent Presumptive Treatment (IPT)** during pregnancy.

Figure 12. IMCI Addressable Conditions

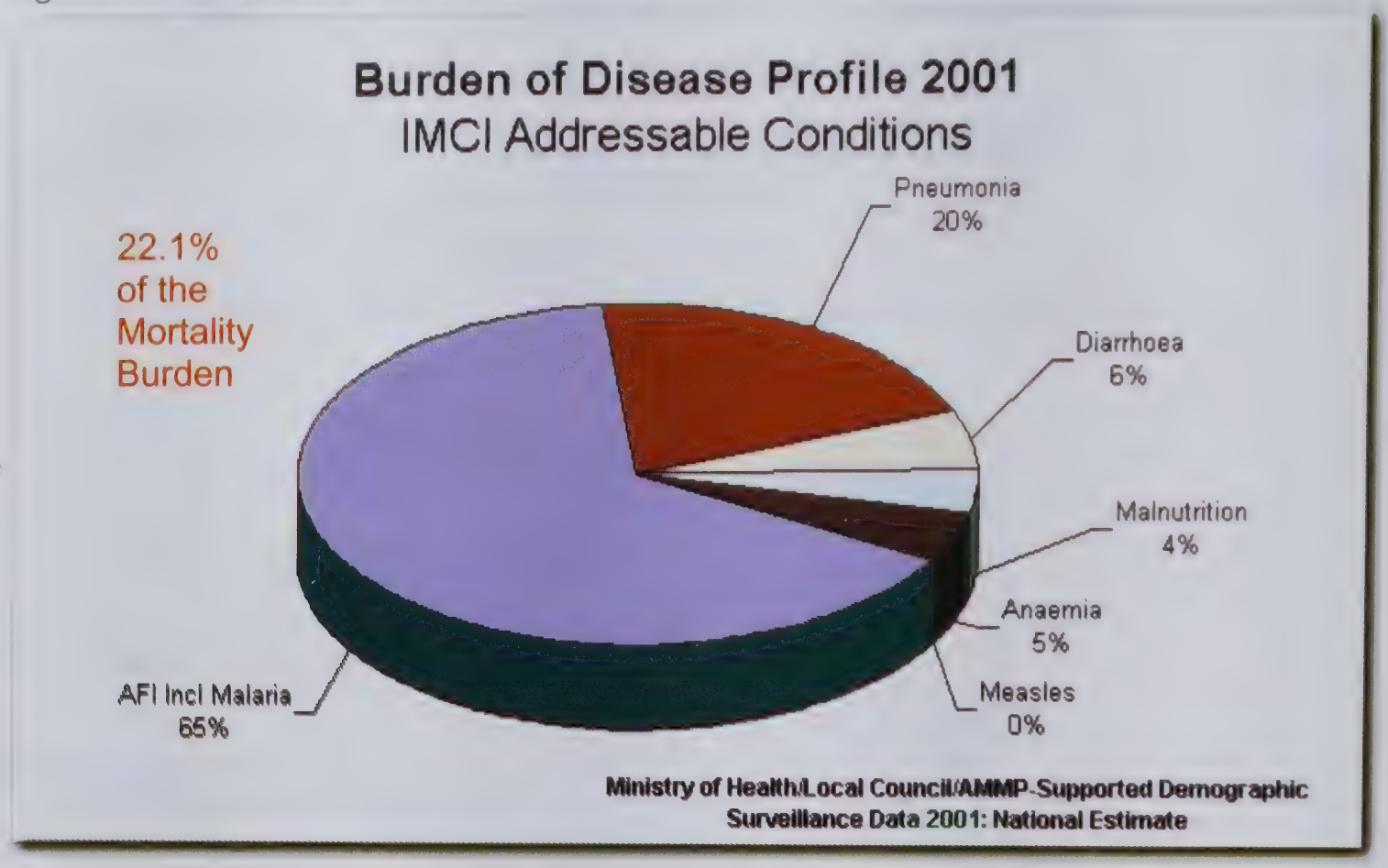


Figure 12 illustrates the relative contribution of the individual component conditions addressed by **IMCI**. Acute febrile illness including malaria constitutes 65% of this estimated burden. This emphasizes the importance of providing efficacious preventive and curative interventions for malaria. The transition from chloroquine to SP in 2001 can be expected to improve dramatically the performance of IMCI. The next largest component cause is Pneumonia, at 20%.

Figure 13. Safe Motherhood Addressable Conditions

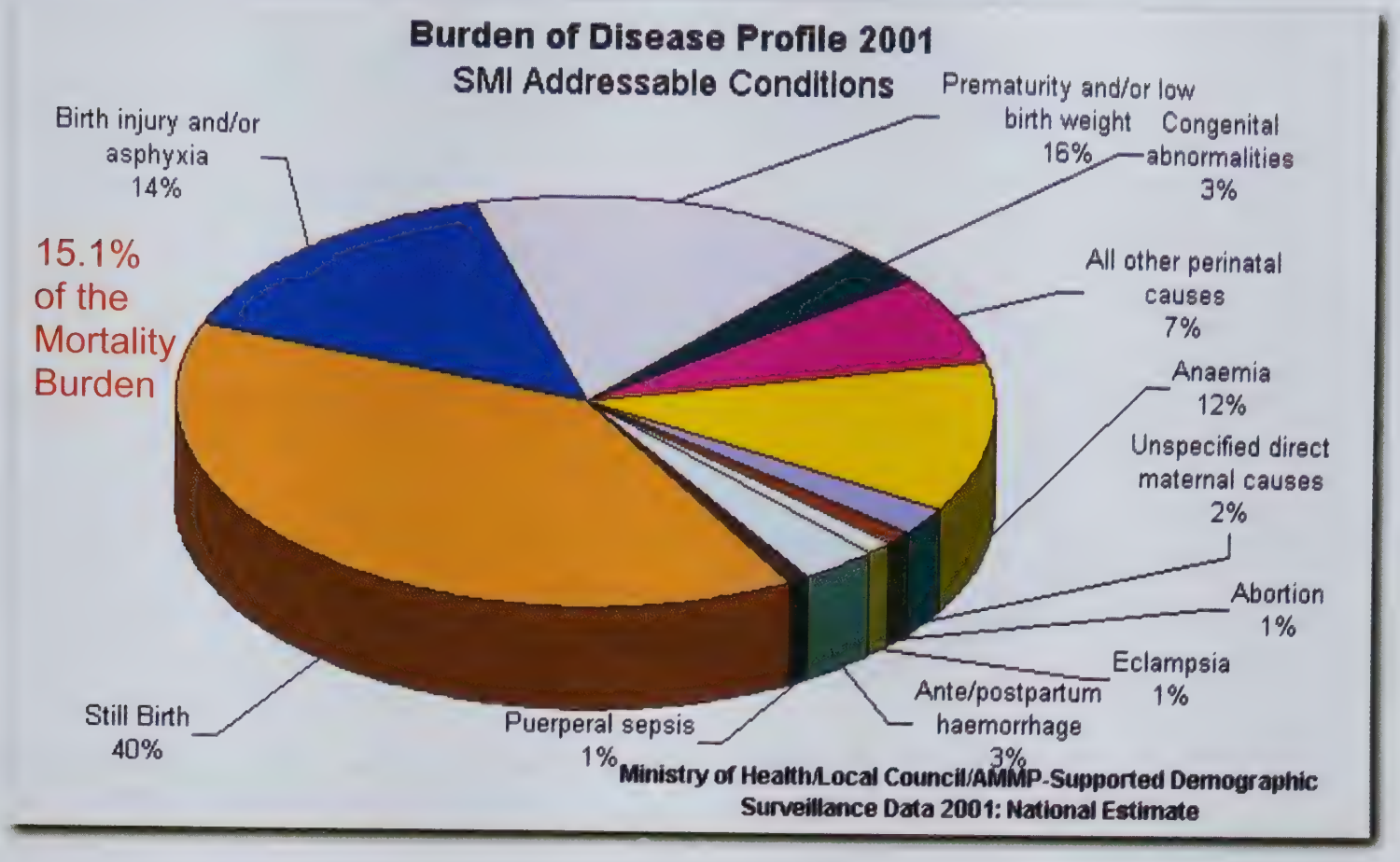
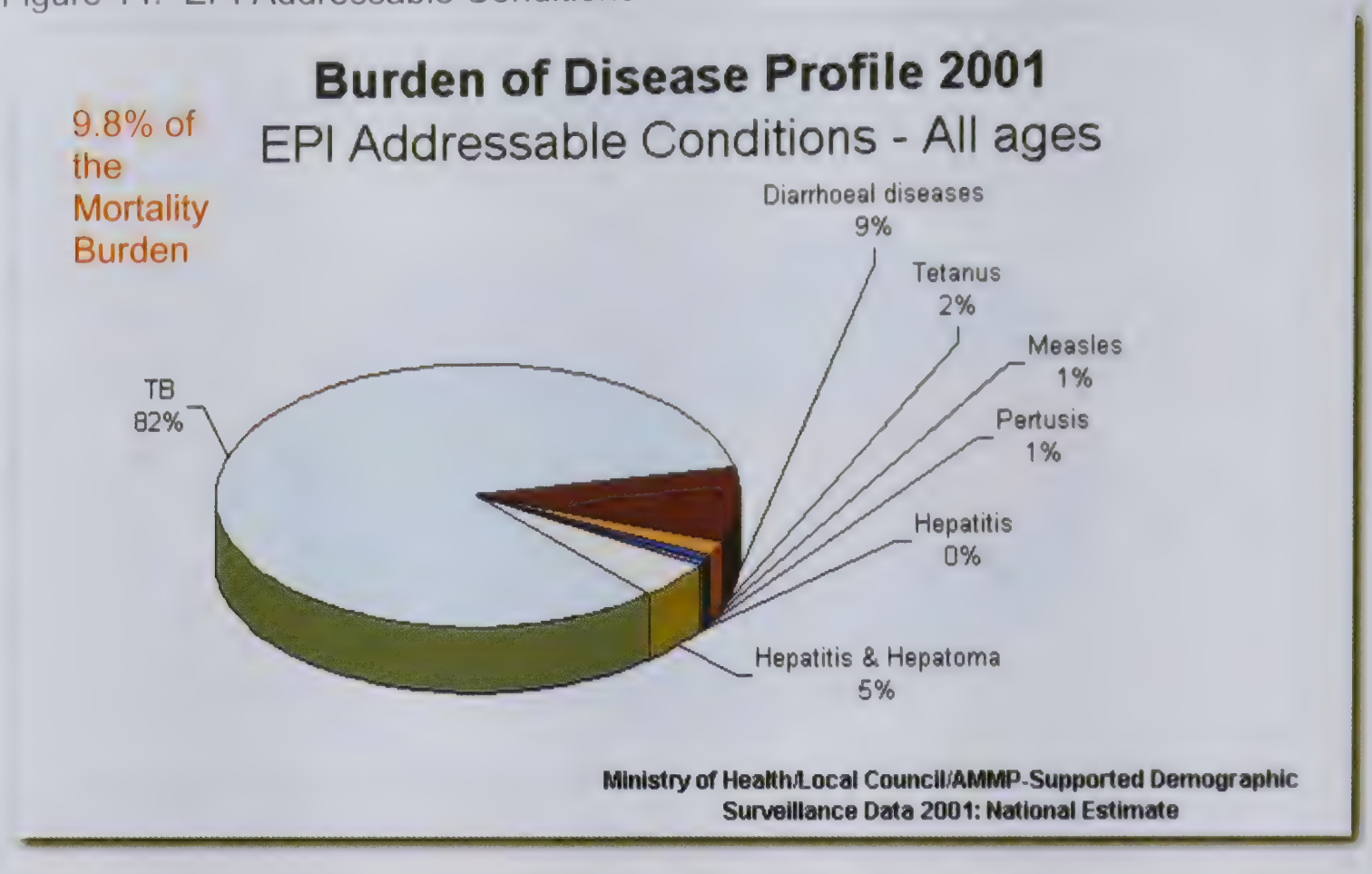

Burden of Disease Profile 2001
SMI Addressable Conditions
Birth injury and/or asphyxia 14%
Prematurity and/or low birth weight 16%
Congenital abnormalities 3%
15.1% of the Mortality Burden
All other perinatal causes 7%
Anaemia 12%
Unspecified direct maternal causes 2%
Abortion 1%
Eclampsia 1%
Ante/postpartum haemorrhage 3%
Puerperal sepsis 1%
Still Birth 40%
Ministry of Health/Local Council/AMMP-Supported Demographic Surveillance Data 2001: National Estimate

Figure 13 illustrates the maternal and early childhood causes of mortality addressed by the **Safe Motherhood Initiative (SMI)**. Many demographic analyses of mortality exclude still births since these died before being born, they do not contribute to measures of life expectancy, or infant and child mortality, etc. Nevertheless, the burden of still births in terms of psychological pain and suffering to parents and physical risks to pregnant women is enormous. If counted as a component of perinatal mortality, they account for 40% of the estimated burden of disease that can be addressed by **SMI**, as well as **Family Planning, Antenatal Care**, **IPT for Malaria, Essential Obstetric Care, Postpartum care,** and **Post abortion care.**

Figure 14. EPI Addressable Conditions



Diseases addressed by the **Expanded Program on Immunisation (EPI)** still account for an estimated 10% of the addressable burden (see Figure 6). As Figure 14 shows, however, TB alone accounts for 82% of this share, and it is rising due to the HIV pandemic. This illustrates the importance of maintaining **EPI** at high coverage. It should be borne in mind, however, that **BCG vaccination** (a component of EPI) can address only a small proportion of the TB burden (due to low community effectiveness see **Additional Comments** on p. 26). The burden share that EPI addresses can be bolstered by additional interventions such as **HIV Prevention**, measles (e.g. **IMCI**), Tetanus (e.g. **SMI**), TB (e.g. **TB DOTS**) and **EPI+ with Vitamin A Supplementation**.

Figure 15. TB DOTS and BCG addressable conditions

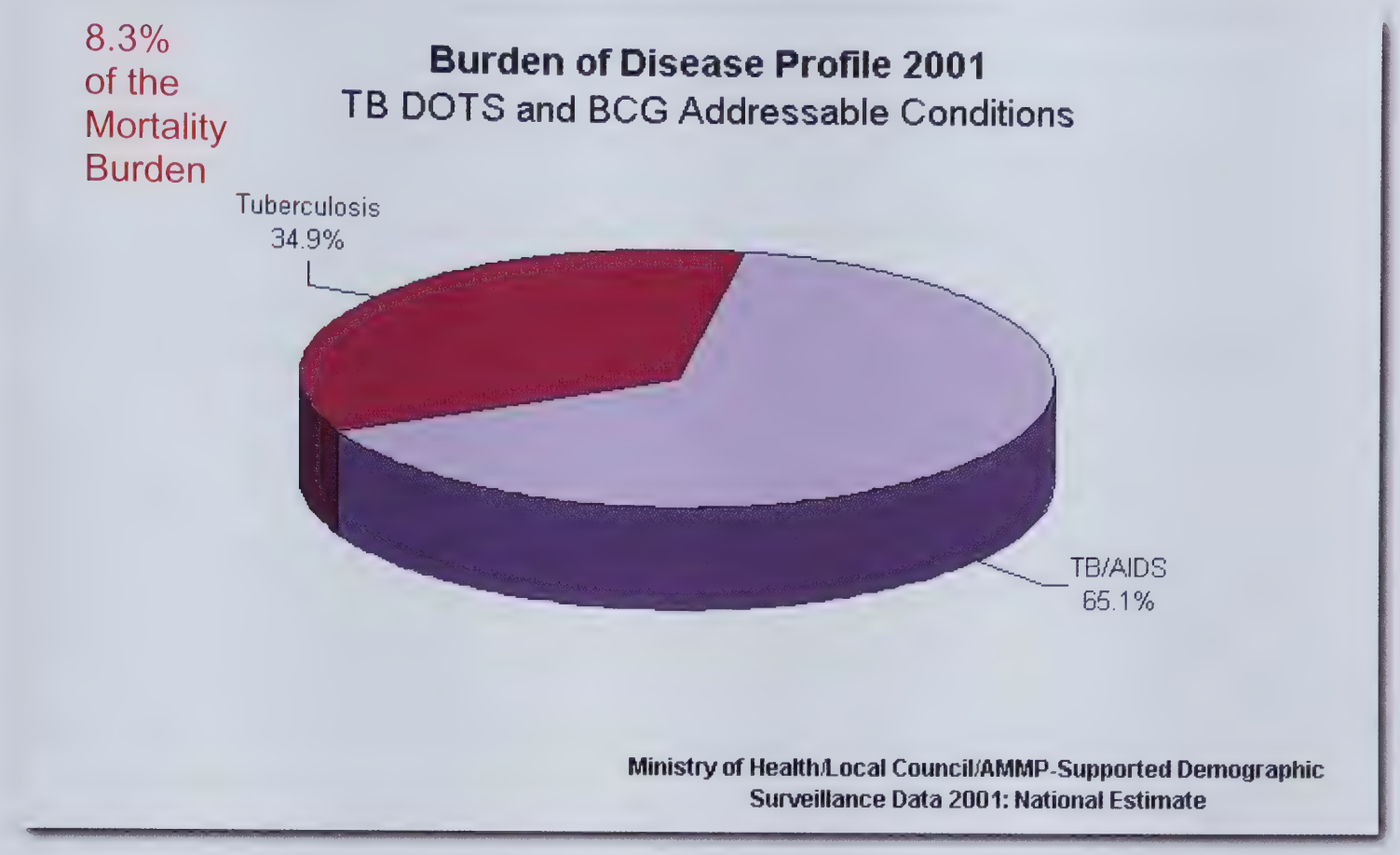


Figure 15 shows that the vast majority of those contributing to the 9% of disease burden addressable by TB interventions died with TB and HIV/AIDS (note that this figure *excludes* the burden of HIV *without* TB). HIV greatly increases the risk of TB mortality. This illustrates the importance of increasing the coverage and integration of both **TB DOTS** and **HIV & AIDS Prevention**.

Figure 16. Injury Prevention and Care Addressable Conditions

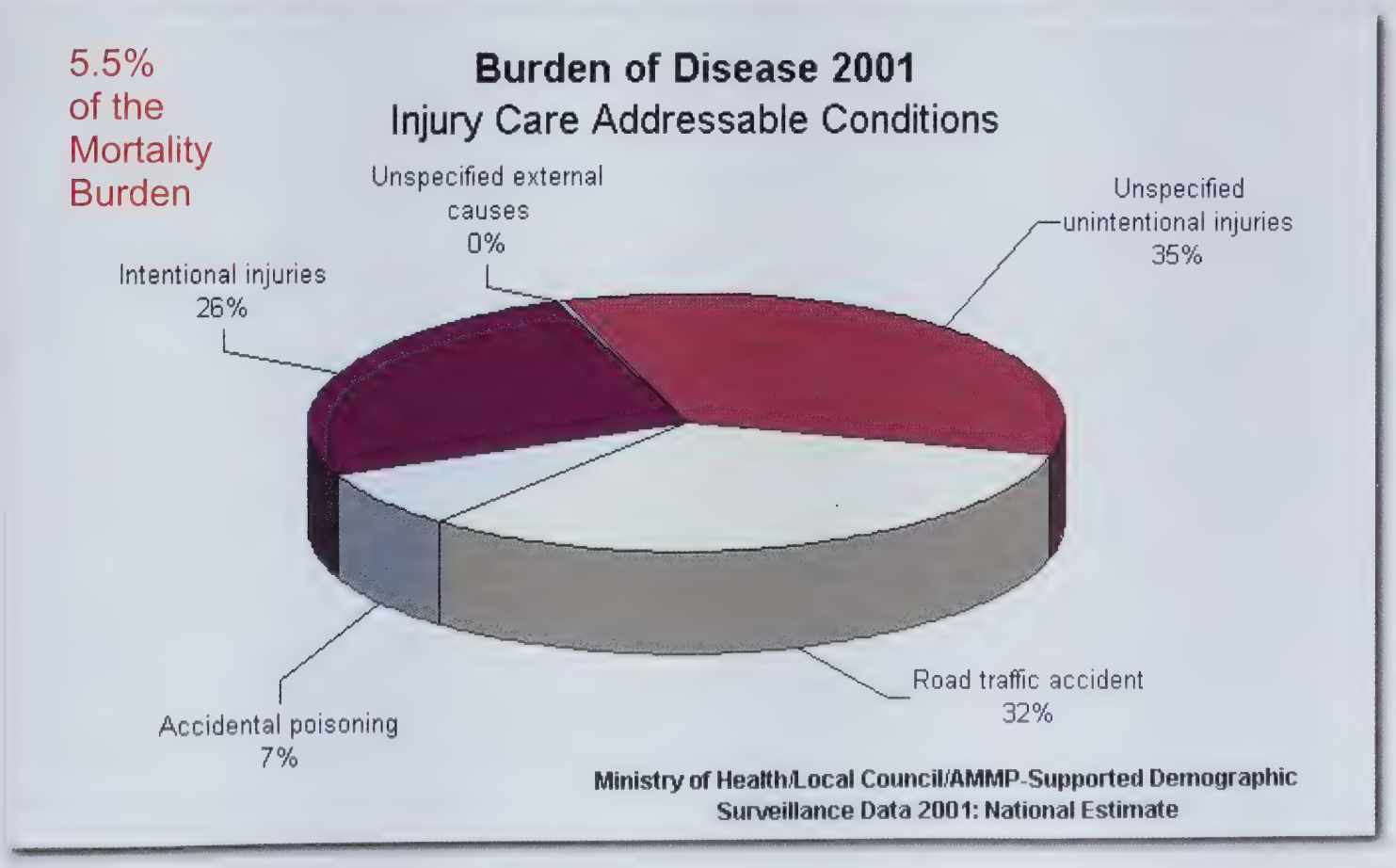


Figure 16 indicates that about a third of the 5% of mortality burden addressable by injury interventions relates to traffic accidents and unintentional injuries, while nearly a quarter are due to violence or suicide. This shows the importance of maintaining a regular supply of **Essential Drug Kits** and other supplies that include materials for **Injury Care**. It also suggests the need for appropriate **Intersectoral Interventions**, e.g. to address the risk of road traffic accidents (e.g. **enforcement of traffic and seatbelt laws**), and reduce violence. The pattern of injuries will vary greatly between districts depending on the nature of roads, which affects road traffic accidents, and proximity to wildlife, which determines risk of animal attacks. **School Health Programs** should consider first aid instruction at primary school level.

Part 3: Additional Figures

Figure 17. Survival Curve for 2001

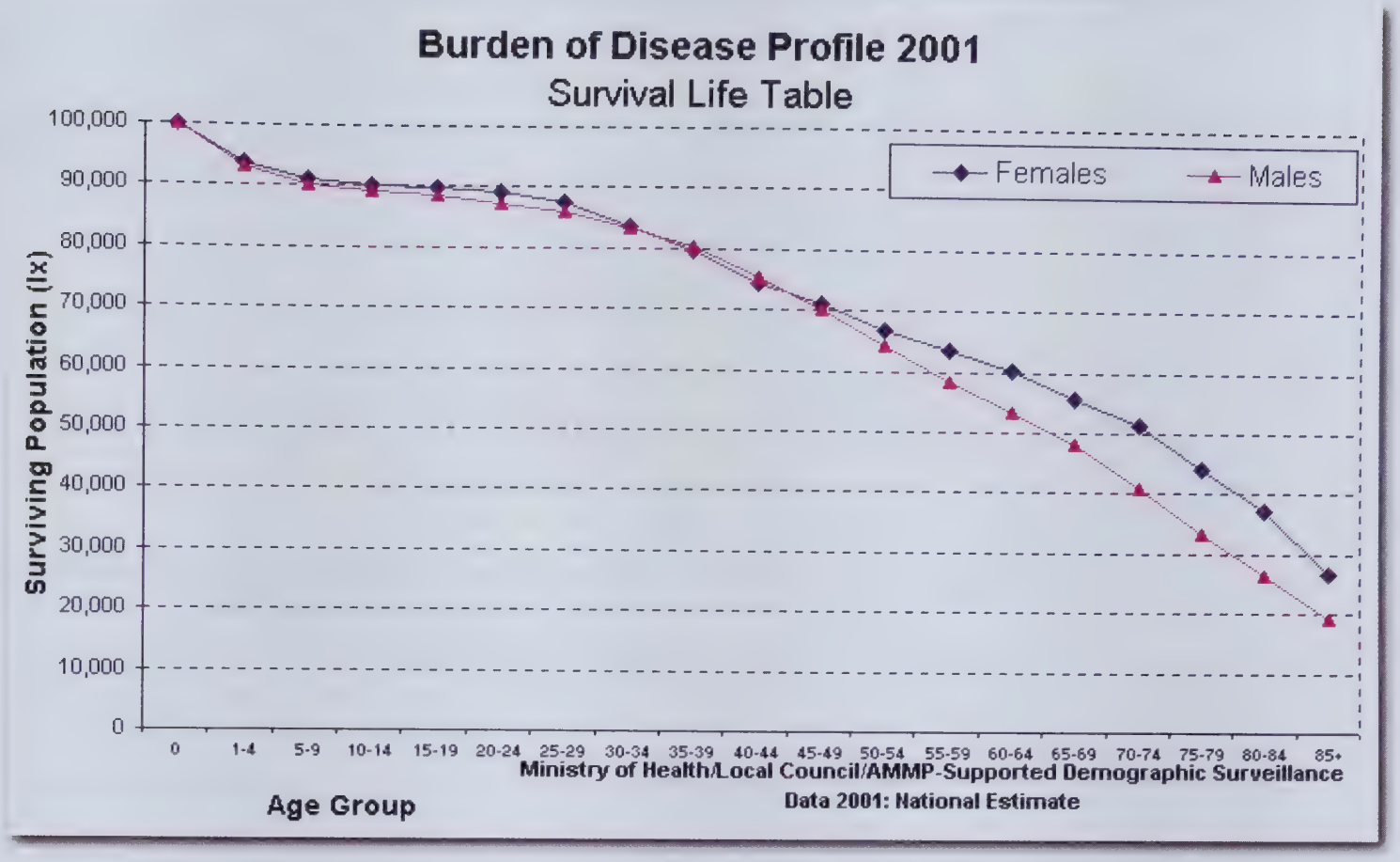
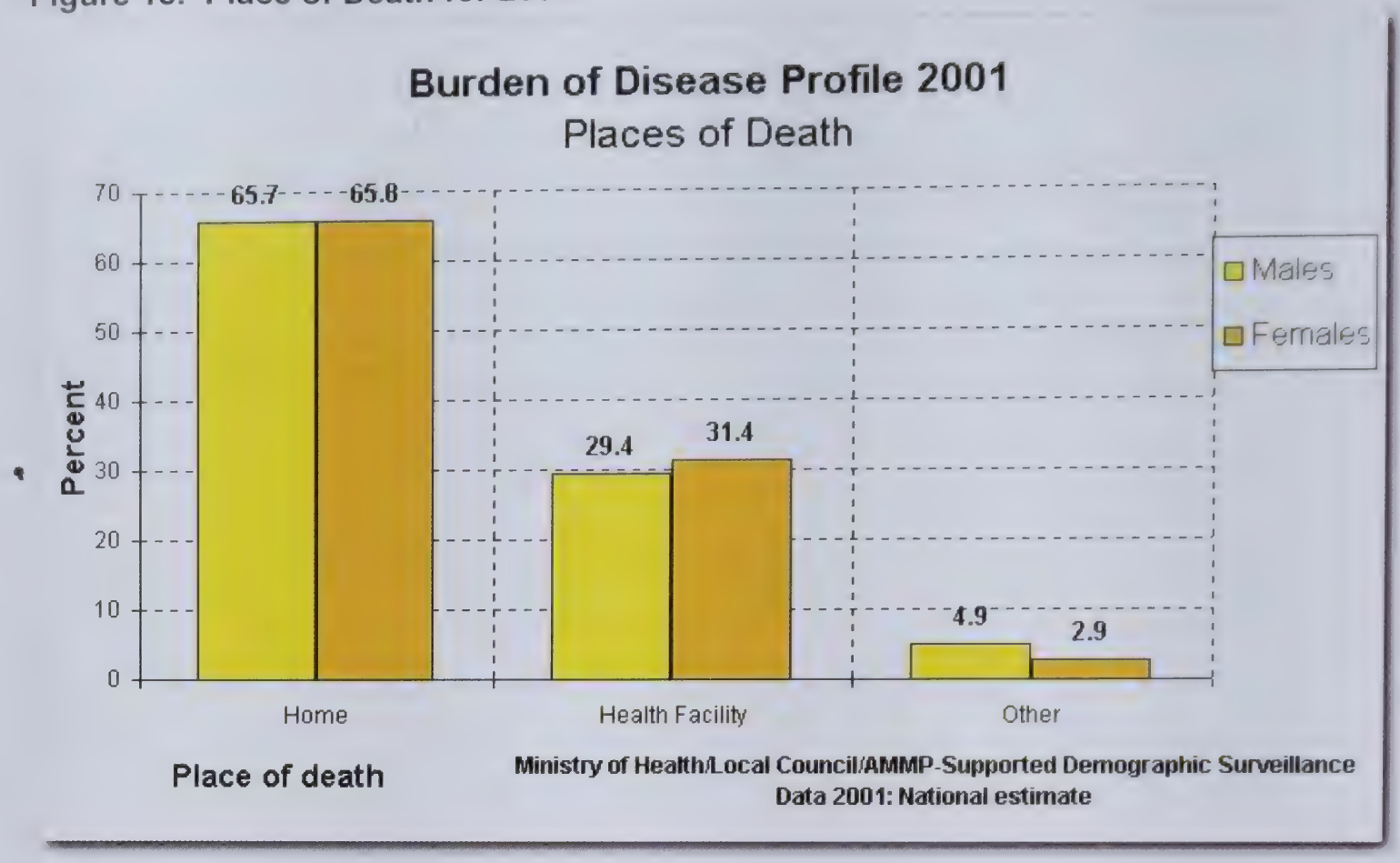


Figure 17 presents the survival curves for men and women. This represents mortality across age and sex groups in the NSS projected to the nation. A steep slope in the line indicates high mortality from age group to age group.

As can be seen, there is a steep slope among infants, and again among adults over 40. There is a large estimated mortality gap between adult men and women. Nearly 50% of men are estimated to die before reaching age 60; women reach this level of mortality at about age 70.

One test of the accuracy of these estimates will be to compare these results to those from the 2002 National Population and Housing Census.

Figure 18. Place of Death for 2001



Assuming that patterns of health facility use in the period before death can be generalised as well as causes of death, Figure 18 shows that about 66% of those who died during 2001 died at home. The proportions for males and females were nearly identical, with a slightly higher proportion of women dying in facilities, and more males dying both outside of facilities and outside of home. The explanation for this is the higher accident mortality among men.

Figure 19. Use of Health Facilities in Period Before Death for 2001

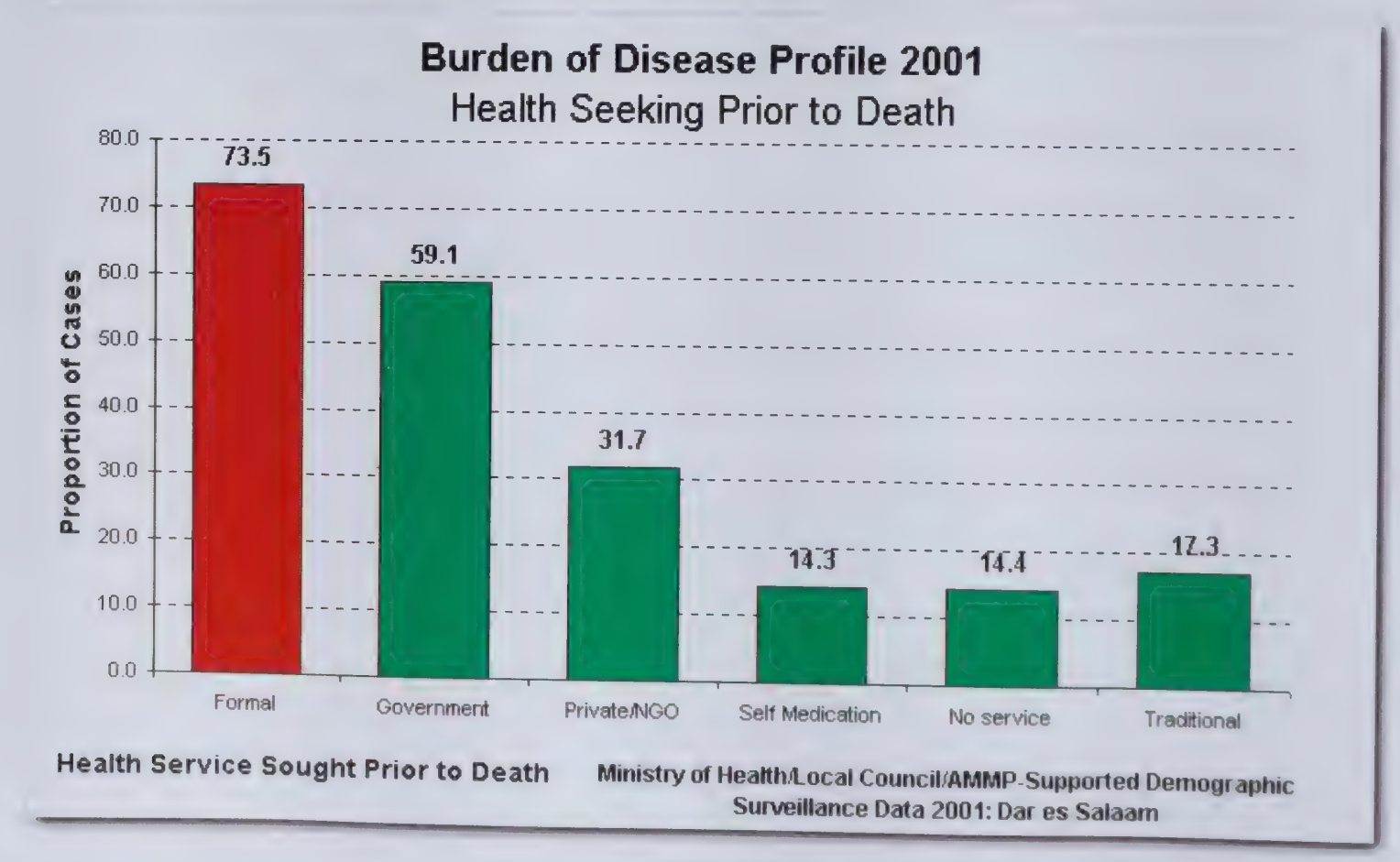


Figure 19 indicates that about three-quarters of those who died in Tanzania last year are estimated to have received some form of care from a formal health services in the period before death. Formal Services (shown in red) consist of government and private/NGO services. 60% are thought to have consulted government services. Note that these proportions to not add to 100% because many people consult more than one facility in the period before death.

Key Messages

Selecting from the National Package of Essential Health Interventions

This mortality burden profile demonstrates the importance of investing in a core group of Minimum Essential Health Interventions. For Tanzania, these interventions could include:

- **EDP** (Essential Drugs Programme) kits or Indent
- **STI Control and AIDS Prevention** (Sexually Transmitted Infection Syndromic Management, School Health Education, etc.);
- **EPI Plus** (Expanded Program of Immunization with Vitamin A Supplementation);
- **TB DOTs** (Tuberculosis Directly Observed Therapy)
- **Malaria Prevention & Management** (using the new National Guidelines including IPT, ITNs, and case management); **IPT** (Intermittent Presumptive Therapy) for malaria control in pregnancy; and **ITNs** (Insecticide Treated Nets) for malaria prevention in children and mothers;
- **SMI** (Safe Motherhood Initiative) including ante and postnatal care, IPT, delivery care, family planning, etc.;
- **IMCI** (Integrated Management of Childhood Illnesses) for under fives;
- **Injury Care** (Traffic Safety, Rule of Rescue, School Health Programs, etc.)

Additional Information Needed for Priority Setting

Potential Gains: Cost Effectiveness and Community Effectiveness

Collectively, these interventions will address over 90% of the total burden of disease of the population. If coverage of these ten strategies can approach 80% of those at risk, substantial reductions in the burden of disease can be expected. Conversely, investing in interventions that do not address these conditions will have only marginal impact on the overall burden of disease and will dilute and distract human and fiscal resources from the poor.

Ultimately, the actual gains and impact interventions in reducing the mortality burden will depend upon their combined *community effectiveness*. In other words, a combination of factors will influence how effectively the addressable burden is actually reduced. These factors include:

- cost and efficacy of interventions
- effective coverage
- provider/client compliance
- diagnostic accuracy

Cost-effectiveness information about interventions that address the major burden of disease components will be particularly important to planners working within tight budget constraints.

Importance of Intervention Coverage Data

The above observations point to the growing importance of including estimates of effective intervention coverage in the HMIS. Such information should prove an

invaluable addition to burden of disease information in guiding the investment efforts necessary to extend the reach and access of essential health interventions to those in greatest need.

Information about non-fatal conditions of public health importance

It has already been mentioned that information about non-fatal conditions that are both common, and cause severe illness or impairment is required to round out the burden of disease picture for Tanzania. For example, both the Global Burden of Disease Study, and the Zimbabwe Burden of Disease Study indicate that mental health conditions such as depression account for a very large portion of the disease burden.

Information on the Future Burdens

As many health professionals in Tanzania are aware, chronic conditions are becoming increasingly important public health issues, and will demand more and more attention in terms of health services. Conditions that are already showing up as important components of the disease burden include **hypertension, stroke, diabetes,** and **cancer**. In addition, we are all aware of the increase in the marketing and advertising of cigarettes; more smoking related illness can be expected. Therefore, attention to and information about preventing such conditions *before* they take a major toll on the health of Tanzanians will also be important to national policy makers.

Acknowledgements and Contact Information

The layout and format of this Burden of Disease Profile was adapted by the Adult Morbidity and Mortality Project (AMMP) from a model developed by the Tanzania Essential Health Interventions Project (TEHIP) for use by Council Health Management Teams. It was created with data from the Ministry of Health National Sentinel Surveillance/Local Council/AMMP-supported demographic surveillance.

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Appendices

Appendix 1. Executive Summary from National Sentinel Surveillance Strategic Plan

The NSS Vision and mission: The Tanzanian Ministry of Health is in the process of establishing a National Sentinel System for health and poverty monitoring based on demographic surveillance (NSS). The vision of the NSS is **to generate and disseminate essential information from sentinel demographic surveillance systems for the equitable development of the Tanzanian people**. It will realise this vision by **providing representative, longitudinal burden of disease and poverty estimates for informed decisions on policy, planning, monitoring and evaluation at the district, regional and national levels**.

Situation assessment: The Ministry of Health has taken several steps toward making the NSS a reality including the identification of a leader and task group for its establishment. It has also secured major bilateral development assistance from the British government to aid in laying the foundations for this unique enterprise in population health and poverty information systems (the Adult Morbidity and Mortality Project, Phase-2 [AMMP-2]). Tanzania is in the fortunate position of having six DSS sites, all of which are anticipated to become contributors to core data sets and information packages. The NSS may also be able to draw on mortality data collected from an additional six rural districts around the country. A three-year action plan and budget for NSS establishment have been submitted to parliament, the main components of which will be funded. In addition, the NSS will strengthen the long-standing partnerships with the district councils that are essential to its success. The NSS will produce a set of core products for national, regional, district, and institutional users. Developmental work on such products is already under way in the various sites. The NSS leadership will guide the refinement, finalisation, adoption, and dissemination of these products. Currently, the NSS is located within the Department of Policy and Planning in the Ministry of Health. As part of its operationalisation, the Ministry will make a careful assessment of all the strategic options for the ultimate organisational location of the NSS.

Existing & potential activities: Several formative activities of the NSS are currently under way. The ability of the NSS to continue to provide information services for Tanzania will depend upon: the continuation of demographic surveillance in existing NSS-managed sites; expansion of surveillance to new districts; finalisation of the NSS s structural design and institutional location; transfer of skills to the Ministry and to district councils; and development of a workable long-term financing plan.

Activity opportunity assessment: The NSS has the ability to cater to the monitoring and evaluation needs of many government ministries and reform efforts in the social services sector beyond health. It can accomplish this long-term aim without compromising its ability to deliver essential health and poverty indicators to all Ministry of Health departments and programmes that require them. The confidence of new customers in the NSS and demographic surveillance as a source of reliable

information must be cultivated over time. This will be accomplished through a program of advocacy and awareness-raising about the NSS and the information gaps that it can fill. In this way the NSS envisions building a broad and solid base of consumers over time.

Operational plan, timeline, and funding: The activities identified as essential to the establishment of the NSS will be carried out by the Ministry of Health s NSS Task Group, district councils, and using technical and financial resources available through AMMP-2. The NSS plans to complete these activities by the end of 2003. Other existing activities needed to ensure the production of Core NSS outputs and transfer of skills to the NSS will be completed by April 2004. This will require the input of additional DSS site partners such as the Ifakara Health Research and Development Centre, the Rufiji Demographic Surveillance System/Tanzania Essential Health Interventions Project, and the TANESA Project.

Partnerships: The NSS has many existing and potential partners. One group consists of institutions that will benefit from the outputs of the NSS. This group of partners consists of Government Ministries, reform programmes, district and regional governments, higher learning institutions, donors, and non-governmental organisations. Depending on the organisational placement of the NSS, some of these may be requested to contribute to the NSS s core operations. Another group of partners consists of those who will contribute data to the NSS. These groups may receive support for data collection and processing that are provided to the NSS using agreed core guidelines and tools.

APPENDIX 2. METHODS

The three sources of data for these estimates were generalised to Tanzania in the following manner and based on the following assumptions.

Methods of ascertaining cause-specific mortality data from sentinel sites

The Ministry of Health of Tanzania is establishing a national sentinel system (NSS) for monitoring cause-specific mortality. The system is based on demographic surveillance in several districts. Three sentinel districts were established in 1992. All-cause and cause-specific mortality information for all ages has been collected continuously since then. The total population participating in surveillance between 1992 and 1999 amounted to over 1% of the Tanzania mainland population.

Briefly, the populations of the surveillance areas are determined by regular census update rounds. Mortality surveillance is conducted using an active reporting system based on a network of respected individuals within each community. Cause of death is determined through administration of a verbal autopsy interview to family members of the deceased. In all cases of death among women aged 15 to 49 relatives are routinely asked if the deceased had been pregnant, and if so, the time during pregnancy or weeks postpartum at which death occurred. Verbal autopsies are usually conducted within two to four weeks of death. A panel of physicians codes verbal autopsies according to a classification system based on the 10th revision of the International Classification of Diseases (ICD-10). This system is well established in the sentinel areas, and we believe the enumeration of adult mortality events to be thorough and complete.

Methods and assumptions for extrapolating mortality levels to derive national estimates

1) The mortality results from each sentinel site were taken to represent the region in which that sentinel site is located. The site in Hai was taken to represent Kilimanjaro, the site in Morogoro District was taken to represent Morogoro Region, and the site in Temeke and Ilala was taken to represent Dar es Salaam.
2) The extrapolation procedure was based upon finding the closest match between regions with sentinel sites and regions without a sentinel site.
3) The three original NSS sites, which were established under the first phase of AMMP, were intended to represent the range of socio-economic status in Tanzania. The 1999 Vice President s Office Poverty and Welfare Monitoring indicators provided a score on a composite index for all regions in Tanzania. This scoring was used to divide the nation into Poverty Welfare quintiles at the regional level.
4) The matching of sentinel and non-sentinel populations was proposed according to the table below.

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Table matching regions with sentinel DSS to regions without sentinel DSS

Poverty Welfare rank (Quitniles & Scores)[a]	Q tile	Score	Sentinel	2002 Population[b]	Under 5	5 plus
Poverty Welfare Rank						
Dar es Salaam[c]	***1***	***22.25***	***Dar***	***2,547,217***	***348,394***	***2,198,823***
Ruvuma	1	21.00	Hai	1,222,242	166,204	1,056,038
Kilimanjaro	***1***	***20.13***	***Hai***	***2,019,963***	***274,681***	***1,745,282***
Singida	1	17.88	Hai	1,109,005	150,806	958,199
Tabora	2	17.75	Hai	1,432,673	194,819	1,237,854
Shinyanga	2	16.88	Hai	2,615,565	355,673	2,259,892
Mbeya	2	16.88	Hai	2,235,271	303,959	1,931,312
Iringa	2	16.00	Hai	1,737,791	236,310	1,501,481
Mwanza	3	15.88	Hai	2,665,965	362,526	2,303,439
Arusha	3	14.63	Mor	2,221,619	279,574	1,942,045
Rukwa	3	14.00	Mor	1,218,977	153,399	1,065,578
Mtwara	3	13.13	Mor	1,079,816	135,887	943,929
Tanga	4	11.88	Mor	1,742,413	219,269	1,523,144
Morogoro	***4***	***10.5***	***Mor***	***1,783,664***	***224,460***	***1,559,204***
Mara	4	10.5	Mor	1,432,476	180,266	1,252,210
Coast	4	9.75	Mor	848,316	106,754	741,562
Kigoma	5	9.50	Mor	1,240,939	156,163	1,084,776
Lindi	5	9.13	Mor	848,562	106,785	741,777
Kagera	5	8.88	Mor	1,957,921	246,389	1,711,532
Dodoma	5	8.25	Mor	1,707,275	214,848	1,492,427
				33,667,670	**4,417,166**	**29,250,504**

[a] Poverty-Welfare quintiles and scores based upon figures contained in: United Republic of Tanzania. Poverty and Welfare Monitoring Indicators. Dar es Salaam: Vice President's Office, 1999.

[b] source: National Bureau os Statistics official estimates

[c] boldface and italic indicates a region with a sentinel site.

5) We assumed that all the regions represented by the Hai sentinel site had the same proportion of under-fives as the Hai sentinel site. The same assumption was made for regions represented by the Morogoro and Dar es Salaam sites as well.
6) Years of Life Lost (YLLs) were calculated for the three existing sentinel sites using the formulae contained in the *Global Burden of Disease 1990* study. This is the same technique used annually for district burden of disease profiles since 1999.
7) We next calculated YLL rates for under-fives and over-fives, by cause, for the sentinel sites. Then we applied those rates to the populations represented by each sentinel to get the estimated number of YLLs per cause for the nation.

Method and assumptions for allocating specific causes of death to assessment of care needs

1) The attribution of causes of death to broad care needs was done using expert opinion and judgement, and using the following criteria:
   - *Acute or episodic care* needed if: curable with one month or less of current appropriate care
   - *Long-term care or management* needed if: cure or management requires one month or more of current appropriate care.
2) The following table shows all specific causes of death coded by the Verbal Autopsy system and the associated care needs.

Specific Cause	Care needs classification
Unspecified communicable diseases	Uncategorised
Unspec. Acute febrile illness	Acute or episodic care
Malaria	Acute or episodic care
Meningitis	Acute or episodic care
All other spec. acute febrile illness	Acute or episodic care
Unspecified Acute Respiratory infections	Acute or episodic care
Pneumonia	Acute or episodic care
All other specified acute respiratory infections	Acute or episodic care
Hepatitis	Long-term care or management
Unspecified TB/AIDS	Long-term care or management
Pulmonary Tuberculosis	Long-term care or management
AIDS	Long-term care or management
AIDS + Pulmonary Tuberculosis	Long-term care or management
All other forms of tuberculosis	Long-term care or management
Diarrhoeal diseases	Acute or episodic care
All other specified diarrhoeal diseases	Acute or episodic care
Tetanus	Acute or episodic care
Rabies	Acute or episodic care
All other spec. communicable diseases	Uncategorised
Still Birth	Acute or episodic care
Birth injury and/or asphyxia	Acute or episodic care
Prematurity and/or low birth weight	Acute or episodic care
Congenital abnormalities	Acute or episodic care
All other perinatal causes	Acute or episodic care
Neonatal tetanus	Acute or episodic care
Malnutrition	Long-term care or management
Measles	Acute or episodic care
Unspec. direct maternal causes	Acute or episodic care
Abortion	Acute or episodic care
Specified Abortion	Acute or episodic care
Eclampsia	Acute or episodic care
Ante/postpartum haemorrhage	Acute or episodic care
Specified Ante/postpartum haemorrhage	Acute or episodic care
Obstructed labour	Acute or episodic care
Puerperal sepsis	Acute or episodic care
Other spec. direct maternal causes	Acute or episodic care
Other spec. direct maternal causes	Acute or episodic care
All other specified diseases	Uncategorised
Unspecified non-communicable causes	Long-term care or management
Unspecified cardiovascular disorders	Long-term care or management
Hypertension	Long-term care or management
Congestive Cardiac Failure	Long-term care or management
Ischaemic Heart Disease	Long-term care or management
Cerebrovascular Disease	Long-term care or management
All other spec. cardiovascular disorders	Long-term care or management
Chronic Obstructive Pulmonary Disease	Long-term care or management
Unpecified liver diseases	Long-term care or management
Liver cirrhosis	Long-term care or management
All other specifed liver diseases	Uncategorised
Acute abdominal conditions	Acute or episodic care
All other specified acute abdominal conditions	Acute or episodic care
Diabetes	Long-term care or management
Unspecified neoplasms	Long-term care or management
Carcinoma breast	Long-term care or management
Carcinoma cervix/uterus	Long-term care or management
Hepatoma	Long-term care or management
Carcinoma of gastrointestinal tract	Long-term care or management
Carcinoma of the lung	Long-term care or management
All other specified neoplasms	Long-term care or management
Renal disorders	Uncategorised
Specified renal disorders	Uncategorised
Central Nervous System disorders	Long-term care or management
Epilepsy	Long-term care or management
All other specified CNS disorders	Uncategorised

All other specified noncommunicable diseases	Uncategorised
Anaemia	Long-term care or management
All other spec. symptoms, signs and syndromes	Uncategorised
Unspecified external causes	Uncategorised
Unspecified unintentional injuries	Uncategorised
Road traffic accident	Acute or episodic care
Accidental poisoning	Acute or episodic care
Other specified unintentional injuries	Uncategorised
Intentional injuries	Acute or episodic care
Homicidal injuries	Acute or episodic care
Suicidal injuries	Acute or episodic care
Undetermined	Uncategorised

Method and assumptions for allocating specific causes of death to interventions to derive 'intervention addressable shares'

1) The list of specific causes of death determined through verbal autopsy at the NSS sites was provided to two physicians from the Ministry of Health.
2) The physicians were also provided with a list of interventions available to District Health Management Teams was taken from a variety of sources.
3) For each intervention, the physicians considered whether the specific causes of death could be significantly addressed if the intervention were provided in a timely and efficient manner, and accessed appropriately by the population.
4) Separate assessments were made for children under-5 and for the population over the age of 5.
5) The following tables show how the intervention addressable shares were determined by the physicians for each of the interventions analysed in this report.

EDP KIT

Cause of Death	Under 5	Over 5
1.0.0 Unspecified communicable diseases	Unspec Communicable disease <5	Unspec Communicable disease 5+ years
1.1.0 Unspec. Acute febrile illness	Actute Febrile Illness <5	Actute Febrile Illness 5+ years
1.1.1 Malaria	Actute Febrile Illness <5	Actute Febrile Illness 5+ years
1.1.2 Meningitis	Actute Febrile Illness <5	Actute Febrile Illness 5+ years
1.1.9 All other spec. acute febrile illness	Actute Febrile Illness <5	Actute Febrile Illness 5+ years
1.2.0 Unspecified Acute Respiratory infections	Pneumonia and ARI in <5	Pneumonia and ARI in 5+ years
1.2.1 Pneumonia	Pneumonia and ARI in <5	Pneumonia and ARI in 5+ years
1.2.9 All other specified acute respiratory infections	Pneumonia and ARI in <5	Pneumonia and ARI in 5+ years
1.3.0 Hepatitis		
1.4.0 Unspecified TB/AIDS		
1.4.1 Pulmonary Tuberculosis		
1.4.2 AIDS		
1.4.3 AIDS + Pulmonary Tuberculosis		
1.4.9 All other forms of tuberculosis		
1.5.0 Diarrhoeal diseases	Diarrhoea <5	Diarrhoea 5+ years
1.5.9 All other specified diarrhoeal diseases	Diarrhoea <5	Diarrhoea 5+ years
1.6.0 Tetanus	Tetanus <5	Tetanus 5+ years
1.7.0 Rabies		
1.9.0 All other spec. communicable diseases	Other spec. communicable diseases <5	Other spec. communicable diseases 5+ years
10.0.0 Still Birth	Perinatal conditions	
11.0.0 Birth injury and/or asphyxia		
12.0.0 Prematurity and/or low birth weight	Perinatal conditions	
13.0.0 Congenital abnormalities		
14.0.0 All other perinatal causes		
15.0.0 Neonatal tetanus		
18.0.0 Malnutrition		
19.0.0 Measles	Measles <5	Measles 5+ years
2.0.0 Unspec. direct maternal causes		
2.1.0 Abortion		
2.1.9 Specified Abortion		
2.2.0 Eclampsia		Maternal conditions
2.3.0 Ante/postpartum haemorrhage		
2.3.9 Specified Ante/postpartum haemorrhage		
2.4.0 Obstructed labour		
2.5.0 Puerperal sepsis		Maternal conditions
2.9.0 Other spec. direct maternal causes		
2.9.0 Other spec. direct maternal causes		
20.0.0 All other specified diseases		
3.0.0 Unspecified non-communicable causes		
3.1.0 Unspecified cardiovascular disorders		
3.1.1 Hypertension		
3.1.2 Congestive Cardiac Failure	Congestive heart failure <5	Cardiac failure & CVD 5+ years
3.1.3 Ischaemic Heart Disease		Cardiac failure & CVD 5+ years
3.1.4 Cerebrovascular Disease		Cardiac failure & CVD 5+ years
3.1.9 All other spec. cardiovascular disorders		
3.2.0 Chronic Obstructive Pulmonary Disease	Chronic Obstructive Pulmonary Disease <5	Chronic Obstructive Pulmonary Disease 5+ years
3.3.0 Unpecified liver diseases		
3.3.1 Liver cirrhosis		
3.3.9 All other specifed liver diseases		
3.4.0 Acute abdominal conditions		
3.4.9 All other specified acute abdominal conditions		
3.5.0 Diabetes		
3.6.0 Unspecified neoplasms		
3.6.1 Carcinoma breast		
3.6.2 Carcinoma cervix/uterus		
3.6.3 Hepatoma		
3.6.4 Carcinoma of gastrointestinal tract		
3.6.5 Carcinoma of the lung		
3.6.9 All other specified neoplasms		
3.7.0 Renal disorders		
3.7.9 Specified renal disorders		

3.8.0 Central Nervous System disorders		
3.8.1 Epilepsy	Epilepsy <5	Epilepsy 5+ years
3.8.9 All other specified CNS disorders		
3.9.0 All other specified noncommunicable diseases		
4.1.0 Anaemia	Anaemia <5	Anaemia 5+ years
4.9.0 All other spec. symptoms, signs and syndromes		
5.0.0 Unspecified external causes	Injuries <5	Injuries 5+ years
5.1.0 Unspecified unintentional injuries	Injuries <5	Injuries 5+ years
5.1.1 Road traffic accident	Injuries <5	Injuries 5+ years
5.1.2 Accidental poisoning	Injuries <5	Injuries 5+ years
5.1.3 Other specified unintentional injuries	Injuries <5	Injuries 5+ years
5.2.0 Intentional injuries	Injuries <5	Injuries 5+ years
5.2.1 Homicidal injuries	Injuries <5	Injuries 5+ years
5.2.2 Suicidal injuries	Injuries <5	Injuries 5+ years
6.0.0 Undetermined		

IMCI

Cause of Death	Under 5
1.0.0 Unspecified communicable diseases	
1.1.0 Unspec. Acute febrile illness	AFI Incl Malaria
1.1.1 Malaria	AFI Incl Malaria
1.1.2 Meningitis	
1.1.9 All other spec. acute febrile illness	AFI Incl Malaria
1.2.0 Unspecified Acute Respiratory infections	Pneumonia
1.2.1 Pneumonia	Pneumonia
1.2.9 All other specified acute respiratory infections	
1.3.0 Hepatitis	
1.4.0 Unspecified TB/AIDS	
1.4.1 Pulmonary Tuberculosis	
1.4.2 AIDS	
1.4.3 AIDS + Pulmonary Tuberculosis	
1.4.9 All other forms of tuberculosis	
1.5.0 Diarrhoeal diseases	Diarrhoea
1.5.9 All other specified diarrhoeal diseases	Diarrhoea
1.6.0 Tetanus	
1.7.0 Rabies	
1.9.0 All other spec. communicable diseases	
10.0.0 Still Birth	
11.0.0 Birth injury and/or asphyxia	
12.0.0 Prematurity and/or low birth weight	
13.0.0 Congenital abnormalities	
14.0.0 All other perinatal causes	
15.0.0 Neonatal tetanus	
18.0.0 Malnutrition	Malnutrition
19.0.0 Measles	Measles
2.0.0 Unspec. direct maternal causes	
2.1.0 Abortion	
2.1.9 Specified Abortion	
2.2.0 Eclampsia	
2.3.0 Ante/postpartum haemorrhage	
2.3.9 Specified Ante/postpartum haemorrhage	
2.4.0 Obstructed labour	
2.5.0 Puerperal sepsis	
2.9.0 Other spec. direct maternal causes	
2.9.0 Other spec. direct maternal causes	
20.0.0 All other specified diseases	
3.0.0 Unspecified non-communicable causes	
3.1.0 Unspecified cardiovascular disorders	
3.1.1 Hypertension	
3.1.2 Congestive Cardiac Failure	
3.1.3 Ischaemic Heart Disease	
3.1.4 Cerebrovascular Disease	
3.1.9 All other spec. cardiovascular disorders	
3.2.0 Chronic Obstructive Pulmonary Disease	
3.3.0 Unpecified liver diseases	
3.3.1 Liver cirrhosis	
3.3.9 All other specifed liver diseases	

3.4.0 Acute abdominal conditions		
3.4.9 All other specified acute abdominal conditions		
3.5.0 Diabetes		
3.6.0 Unspecified neoplasms		
3.6.1 Carcinoma breast		
3.6.2 Carcinoma cervix/uterus		
3.6.3 Hepatoma		
3.6.4 Carcinoma of gastrointestinal tract		
3.6.5 Carcinoma of the lung		
3.6.9 All other specified neoplasms		
3.7.0 Renal disorders		
3.7.9 Specified renal disorders		
3.8.0 Central Nervous System disorders		
3.8.1 Epilepsy		
3.8.9 All other specified CNS disorders		
3.9.0 All other specified noncommunicable diseases		
4.1.0 Anaemia		Anaemia
4.9.0 All other spec. symptoms, signs and syndromes		
5.0.0 Unspecified external causes		
5.1.0 Unspecified unintentional injuries		
5.1.1 Road traffic accident		
5.1.2 Accidental poisoning		
5.1.3 Other specified unintentional injuries		
5.2.0 Intentional injuries		
5.2.1 Homicidal injuries		
5.2.2 Suicidal injuries		
6.0.0 Undetermined		

SMI

Cause of Death	Under 5	Over 5
1.0.0 Unspecified communicable diseases		
1.1.0 Unspec. Acute febrile illness		
1.1.1 Malaria		
1.1.2 Meningitis		
1.1.9 All other spec. acute febrile illness		
1.2.0 Unspecified Acute Respiratory infections		
1.2.1 Pneumonia		
1.2.9 All other specified acute respiratory infections		
1.3.0 Hepatitis		
1.4.0 Unspecified TB/AIDS		
1.4.1 Pulmonary Tuberculosis		
1.4.2 AIDS		
1.4.3 AIDS + Pulmonary Tuberculosis		
1.4.9 All other forms of tuberculosis		
1.5.0 Diarrhoeal diseases		
1.5.9 All other specified diarrhoeal diseases		
1.6.0 Tetanus		
1.7.0 Rabies		
1.9.0 All other spec. communicable diseases		
10.0.0 Still Birth	Still Birth	
11.0.0 Birth injury and/or asphyxia	Birth injury and/or asphyxia	
12.0.0 Prematurity and/or low birth weight	Prematurity and/or low birth weight	
13.0.0 Congenital abnormalities	Congenital abnormalities	
14.0.0 All other perinatal causes	All other perinatal causes	
15.0.0 Neonatal tetanus	Neonatal tetanus	
18.0.0 Malnutrition		
19.0.0 Measles		
2.0.0 Unspec. Direct maternal causes		Unsp. direct maternal causes
2.1.0 Abortion		Abortion
2.1.9 Specified Abortion		Abortion
2.2.0 Eclampsia		Eclampsia
2.3.0 Ante/postpartum haemorrhage		Ante/postpartum haemorrhage
2.3.9 Specified Ante/postpartum haemorrhage		Ante/postpartum haemorrhage
2.4.0 Obstructed labour		Obstructed labour
2.5.0 Puerperal sepsis		Puerperal sepsis

2.9.0 Other spec. direct maternal causes	Other specified maternal causes	
2.9.0 Other spec. direct maternal causes	Other specified maternal causes	
20.0.0 All other specified diseases		
3.0.0 Unspecified non-communicable causes		
3.1.0 Unspecified cardiovascular disorders		
3.1.1 Hypertension		
3.1.2 Congestive Cardiac Failure		
3.1.3 Ischaemic Heart Disease		
3.1.4 Cerebrovascular Disease		
3.1.9 All other spec. cardiovascular disorders		
3.2.0 Chronic Obstructive Pulmonary Disease		
3.3.0 Unpecified liver diseases		
3.3.1 Liver cirrhosis		
3.3.9 All other specifed liver diseases		
3.4.0 Acute abdominal conditions		
3.4.9 All other specified acute abdominal conditions		
3.5.0 Diabetes		
3.6.0 Unspecified neoplasms		
3.6.1 Carcinoma breast		
3.6.2 Carcinoma cervix/uterus		
3.6.3 Hepatoma		
3.6.4 Carcinoma of gastrointestinal tract		
3.6.5 Carcinoma of the lung		
3.6.9 All other specified neoplasms		
3.7.0 Renal disorders		
3.7.9 Specified renal disorders		
3.8.0 Central Nervous System disorders		
3.8.1 Epilepsy		
3.8.9 All other specified CNS disorders		
3.9.0 All other specified noncommunicable diseases		
4.1.0 Anaemia	Anaemia	Anaemia
4.9.0 All other spec. symptoms, signs and syndromes		
5.0.0 Unspecified external causes		
5.1.0 Unspecified unintentional injuries		
5.1.1 Road traffic accident		
5.1.2 Accidental poisoning		
5.1.3 Other specified unintentional injuries		
5.2.0 Intentional injuries		
5.2.1 Homicidal injuries		
5.2.2 Suicidal injuries		
6.0.0 Undetermined		

EPI

Cause of Death	Under 5	Over 5
1.0.0 Unspecified communicable diseases		
1.1.0 Unspec. Acute febrile illness		
1.1.1 Malaria		
1.1.2 Meningitis		
1.1.9 All other spec. acute febrile illness		
1.2.0 Unspecified Acute Respiratory infections		
1.2.1 Pneumonia		
1.2.9 All other specified acute respiratory infections	Pertusis & other spec. ARI	
1.3.0 Hepatitis	Hepatitis	Hepatitis & Hepatoma
1.4.0 Unspecified TB/AIDS	TB	TB
1.4.1 Pulmonary Tuberculosis	TB	TB
1.4.2 AIDS		
1.4.3 AIDS + Pulmonary Tuberculosis	TB	TB
1.4.9 All other forms of tuberculosis		
1.5.0 Diarrhoeal diseases	Diarrhoeal diseases	
1.5.9 All other specified diarrhoeal diseases		
1.6.0 Tetanus	Tetanus	Tetanus
1.7.0 Rabies		
1.9.0 All other spec. communicable diseases		
10.0.0 Still Birth		
11.0.0 Birth injury and/or asphyxia		

12.0.0 Prematurity and/or low birth weight		
13.0.0 Congenital abnormalities		
14.0.0 All other perinatal causes		
15.0.0 Neonatal tetanus	Tetanus	
18.0.0 Malnutrition		
19.0.0 Measles	Measles	Measles
2.0.0 Unspec. direct maternal causes		
2.1.0 Abortion		
2.1.9 Specified Abortion		
2.2.0 Eclampsia		
2.3.0 Ante/postpartum haemorrhage		
2.3.9 Specified Ante/postpartum haemorrhage		
2.4.0 Obstructed labour		
2.5.0 Puerperal sepsis		
2.9.0 Other spec. direct maternal causes		
2.9.0 Other spec. direct maternal causes		
20.0.0 All other specified diseases		
3.0.0 Unspecified non-communicable causes		
3.1.0 Unspecified cardiovascular disorders		
3.1.1 Hypertension		
3.1.2 Congestive Cardiac Failure		
3.1.3 Ischaemic Heart Disease		
3.1.4 Cerebrovascular Disease		
3.1.9 All other spec. cardiovascular disorders		
3.2.0 Chronic Obstructive Pulmonary Disease		
3.3.0 Unpecified liver diseases		
3.3.1 Liver cirrhosis		
3.3.9 All other specifed liver diseases		
3.4.0 Acute abdominal conditions		
3.4.9 All other specified acute abdominal conditions		
3.5.0 Diabetes		
3.6.0 Unspecified neoplasms		
3.6.1 Carcinoma breast		
3.6.2 Carcinoma cervix/uterus		
3.6.3 Hepatoma		Hepatitis & Hepatoma
3.6.4 Carcinoma of gastrointestinal tract		
3.6.5 Carcinoma of the lung		
3.6.9 All other specified neoplasms		
3.7.0 Renal disorders		
3.7.9 Specified renal disorders		
3.8.0 Central Nervous System disorders		
3.8.1 Epilepsy		
3.8.9 All other specified CNS disorders		
3.9.0 All other specified noncommunicable diseases		
4.1.0 Anaemia		
4.9.0 All other spec. symptoms, signs and syndromes		
5.0.0 Unspecified external causes		
5.1.0 Unspecified unintentional injuries		
5.1.1 Road traffic accident		
5.1.2 Accidental poisoning		
5.1.3 Other specified unintentional injuries		
5.2.0 Intentional injuries		
5.2.1 Homicidal injuries		
5.2.2 Suicidal injuries		
6.0.0 Undetermined		

TB DOTS

Cause of Death	Under 5	Over 5
1.0.0 Unspecified communicable diseases		
1.1.0 Unspec. Acute febrile illness		
1.1.1 Malaria		
1.1.2 Meningitis		
1.1.9 All other spec. acute febrile illness		
1.2.0 Unspecified Acute Respiratory infections		
1.2.1 Pneumonia		
1.2.9 All other specified acute respiratory infections		

1.3.0 Hepatitis		
1.4.0 Unspecified TB/AIDS	TB/AIDS	TB/AIDS
1.4.1 Pulmonary Tuberculosis	Tuberculosis	Tuberculosis
1.4.2 AIDS		
1.4.3 AIDS + Pulmonary Tuberculosis	TB/AIDS	TB/AIDS
1.4.9 All other forms of tuberculosis	Tuberculosis	Tuberculosis
1.5.0 Diarrhoeal diseases		
1.5.9 All other specified diarrhoeal diseases		
1.6.0 Tetanus		
1.7.0 Rabies		
1.9.0 All other spec. communicable diseases		
10.0.0 Still Birth		
11.0.0 Birth injury and/or asphyxia		
12.0.0 Prematurity and/or low birth weight		
13.0.0 Congenital abnormalities		
14.0.0 All other perinatal causes		
15.0.0 Neonatal tetanus		
18.0.0 Malnutrition		
19.0.0 Measles		
2.0.0 Unspec. direct maternal causes		
2.1.0 Abortion		
2.1.9 Specified Abortion		
2.2.0 Eclampsia		
2.3.0 Ante/postpartum haemorrhage		
2.3.9 Specified Ante/postpartum haemorrhage		
2.4.0 Obstructed labour		
2.5.0 Puerperal sepsis		
2.9.0 Other spec. direct maternal causes		
2.9.0 Other spec. direct maternal causes		
20.0.0 All other specified diseases		
3.0.0 Unspecified non-communicable causes		
3.1.0 Unspecified cardiovascular disorders		
3.1.1 Hypertension		
3.1.2 Congestive Cardiac Failure		
3.1.3 Ischaemic Heart Disease		
3.1.4 Cerebrovascular Disease		
3.1.9 All other spec. cardiovascular disorders		
3.2.0 Chronic Obstructive Pulmonary Disease		
3.3.0 Unpecified liver diseases		
3.3.1 Liver cirrhosis		
3.3.9 All other specifed liver diseases		
3.4.0 Acute abdominal conditions		
3.4.9 All other specified acute abdominal conditions		
3.5.0 Diabetes		
3.6.0 Unspecified neoplasms		
3.6.1 Carcinoma breast		
3.6.2 Carcinoma cervix/uterus		
3.6.3 Hepatoma		
3.6.4 Carcinoma of gastrointestinal tract		
3.6.5 Carcinoma of the lung		
3.6.9 All other specified neoplasms		
3.7.0 Renal disorders		
3.7.9 Specified renal disorders		
3.8.0 Central Nervous System disorders		
3.8.1 Epilepsy		
3.8.9 All other specified CNS disorders		
3.9.0 All other specified noncommunicable diseases		
4.1.0 Anaemia		
4.9.0 All other spec. symptoms, signs and syndromes		
5.0.0 Unspecified external causes		
5.1.0 Unspecified unintentional injuries		
5.1.1 Road traffic accident		
5.1.2 Accidental poisoning		
5.1.3 Other specified unintentional injuries		
5.2.0 Intentional injuries		
5.2.1 Homicidal injuries		
5.2.2 Suicidal injuries		

6.0.0 Undetermined

STI (syndromic & HIV prevention)

Cause of Death	Under 5	Over 5
1.0.0 Unspecified communicable diseases		
1.1.0 Unspec. Acute febrile illness		
1.1.1 Malaria		
1.1.2 Meningitis		
1.1.9 All other spec. acute febrile illness		
1.2.0 Unspecified Acute Respiratory infections		
1.2.1 Pneumonia		
1.2.9 All other specified acute respiratory infections		
1.3.0 Hepatitis		
1.4.0 Unspecified TB/AIDS	TB/AIDS	TB/AIDS
1.4.1 Pulmonary Tuberculosis		
1.4.2 AIDS	AIDS	AIDS
1.4.3 AIDS + Pulmonary Tuberculosis	TB/AIDS	TB/AIDS
1.4.9 All other forms of tuberculosis		
1.5.0 Diarrhoeal diseases		
1.5.9 All other specified diarrhoeal diseases		
1.6.0 Tetanus		
1.7.0 Rabies		
1.9.0 All other spec. communicable diseases		
10.0.0 Still Birth	Perinatal	
11.0.0 Birth injury and/or asphyxia		
12.0.0 Prematurity and/or low birth weight	Perinatal	
13.0.0 Congenital abnormalities	Perinatal	
14.0.0 All other perinatal causes	Perinatal	
15.0.0 Neonatal tetanus		
18.0.0 Malnutrition		
19.0.0 Measles		
2.0.0 Unspec. direct maternal causes		
2.1.0 Abortion	Perinatal	Maternal causes
2.1.9 Specified Abortion		
2.2.0 Eclampsia		
2.3.0 Ante/postpartum haemorrhage		
2.3.9 Specified Ante/postpartum haemorrhage		
2.4.0 Obstructed labour		
2.5.0 Puerperal sepsis		Maternal causes
2.9.0 Other spec. direct maternal causes		
2.9.0 Other spec. direct maternal causes		
20.0.0 All other specified diseases		
3.0.0 Unspecified non-communicable causes		
3.1.0 Unspecified cardiovascular disorders		
3.1.1 Hypertension		
3.1.2 Congestive Cardiac Failure		
3.1.3 Ischaemic Heart Disease		
3.1.4 Cerebrovascular Disease		
3.1.9 All other spec. cardiovascular disorders		
3.2.0 Chronic Obstructive Pulmonary Disease		
3.3.0 Unpecified liver diseases		
3.3.1 Liver cirrhosis		
3.3.9 All other specifed liver diseases		
3.4.0 Acute abdominal conditions		
3.4.9 All other specified acute abdominal conditions		
3.5.0 Diabetes		
3.6.0 Unspecified neoplasms		
3.6.1 Carcinoma breast		
3.6.2 Carcinoma cervix/uterus		
3.6.3 Hepatoma		
3.6.4 Carcinoma of gastrointestinal tract		
3.6.5 Carcinoma of the lung		
3.6.9 All other specified neoplasms		
3.7.0 Renal disorders		
3.7.9 Specified renal disorders		
3.8.0 Central Nervous System disorders		

3.8.1 Epilepsy
3.8.9 All other specified CNS disorders
3.9.0 All other specified noncommunicable diseases
4.1.0 Anaemia
4.9.0 All other spec. symptoms, signs and syndromes
5.0.0 Unspecified external causes
5.1.0 Unspecified unintentional injuries
5.1.1 Road traffic accident
5.1.2 Accidental poisoning
5.1.3 Other specified unintentional injuries
5.2.0 Intentional injuries
5.2.1 Homicidal injuries
5.2.2 Suicidal injuries
6.0.0 Undetermined

Injuries

Cause of Death	Under 5	Over 5
1.0.0 Unspecified communicable diseases		
1.1.0 Unspec. Acute febrile illness		
1.1.1 Malaria		
1.1.2 Meningitis		
1.1.9 All other spec. acute febrile illness		
1.2.0 Unspecified Acute Respiratory infections		
1.2.1 Pneumonia		
1.2.9 All other specified acute respiratory infections		
1.3.0 Hepatitis		
1.4.0 Unspecified TB/AIDS		
1.4.1 Pulmonary Tuberculosis		
1.4.2 AIDS		
1.4.3 AIDS + Pulmonary Tuberculosis		
1.4.9 All other forms of tuberculosis		
1.5.0 Diarrhoeal diseases		
1.5.9 All other specified diarrhoeal diseases		
1.6.0 Tetanus		
1.7.0 Rabies		
1.9.0 All other spec. communicable diseases		
10.0.0 Still Birth		
11.0.0 Birth injury and/or asphyxia		
12.0.0 Prematurity and/or low birth weight		
13.0.0 Congenital abnormalities		
14.0.0 All other perinatal causes		
15.0.0 Neonatal tetanus		
18.0.0 Malnutrition		
19.0.0 Measles		
2.0.0 Unspec. direct maternal causes		
2.1.0 Abortion		
2.1.9 Specified Abortion		
2.2.0 Eclampsia		
2.3.0 Ante/postpartum haemorrhage		
2.3.9 Specified Ante/postpartum haemorrhage		
2.4.0 Obstructed labour		
2.5.0 Puerperal sepsis		
2.9.0 Other spec. direct maternal causes		
2.9.0 Other spec. direct maternal causes		
20.0.0 All other specified diseases		
3.0.0 Unspecified non-communicable causes		
3.1.0 Unspecified cardiovascular disorders		
3.1.1 Hypertension		
3.1.2 Congestive Cardiac Failure		
3.1.3 Ischaemic Heart Disease		
3.1.4 Cerebrovascular Disease		
3.1.9 All other spec. cardiovascular disorders		
3.2.0 Chronic Obstructive Pulmonary Disease		
3.3.0 Unpecified liver diseases		
3.3.1 Liver cirrhosis		
3.3.9 All other specifed liver diseases		

3.4.0 Acute abdominal conditions		
3.4.9 All other specified acute abdominal conditions		
3.5.0 Diabetes		
3.6.0 Unspecified neoplasms		
3.6.1 Carcinoma breast		
3.6.2 Carcinoma cervix/uterus		
3.6.3 Hepatoma		
3.6.4 Carcinoma of gastrointestinal tract		
3.6.5 Carcinoma of the lung		
3.6.9 All other specified neoplasms		
3.7.0 Renal disorders		
3.7.9 Specified renal disorders		
3.8.0 Central Nervous System disorders		
3.8.1 Epilepsy		
3.8.9 All other specified CNS disorders		
3.9.0 All other specified noncommunicable diseases		
4.1.0 Anaemia		
4.9.0 All other spec. symptoms, signs and syndromes		
5.0.0 Unspecified external causes	Unspecified external causes	Unspecified external causes
5.1.0 Unspecified unintentional injuries	Unspecified unintentional injuries	Unspecified unintentional injuries
5.1.1 Road traffic accident	Road traffic accident	Road traffic accident
5.1.2 Accidental poisoning	Accidental poisoning	Accidental poisoning
5.1.3 Other specified unintentional injuries	Unspecified unintentional injuries	Unspecified unintentional injuries
5.2.0 Intentional injuries	Intentional injuries	Intentional injuries
5.2.1 Homicidal injuries	Intentional injuries	Intentional injuries
5.2.2 Suicidal injuries	Intentional injuries	Intentional injuries
6.0.0 Undetermined		

Malaria

Cause of Death	Under 5	Over 5
1.0.0 Unspecified communicable diseases		
1.1.0 Unspec. Acute febrile illness	AFI Incl Malaria (<5yrs)	AFI Incl Malaria (Others)
1.1.1 Malaria		
1.1.2 Meningitis		
1.1.9 All other spec. acute febrile illness	AFI Incl Malaria (<5yrs)	AFI Incl Malaria (Others)
1.2.0 Unspecified Acute Respiratory infections		
1.2.1 Pneumonia		
1.2.9 All other specified acute respiratory infections		
1.3.0 Hepatitis		
1.4.0 Unspecified TB/AIDS		
1.4.1 Pulmonary Tuberculosis		
1.4.2 AIDS		
1.4.3 AIDS + Pulmonary Tuberculosis		
1.4.9 All other forms of tuberculosis		
1.5.0 Diarrhoeal diseases		
1.5.9 All other specified diarrhoeal diseases		
1.6.0 Tetanus		
1.7.0 Rabies		
1.9.0 All other spec. communicable diseases		
10.0.0 Still Birth		
11.0.0 Birth injury and/or asphyxia		
12.0.0 Prematurity and/or low birth weight		
13.0.0 Congenital abnormalities		
14.0.0 All other perinatal causes		
15.0.0 Neonatal tetanus		
18.0.0 Malnutrition		
19.0.0 Measles		
2.0.0 Unspec. direct maternal causes		
2.1.0 Abortion		
2.1.9 Specified Abortion		
2.2.0 Eclampsia		
2.3.0 Ante/postpartum haemorrhage		
2.3.9 Specified Ante/postpartum haemorrhage		
2.4.0 Obstructed labour		
2.5.0 Puerperal sepsis		
2.9.0 Other spec. direct maternal causes		

2.9.0 Other spec. direct maternal causes
20.0.0 All other specified diseases
3.0.0 Unspecified non-communicable causes
3.1.0 Unspecified cardiovascular disorders
3.1.1 Hypertension
3.1.2 Congestive Cardiac Failure
3.1.3 Ischaemic Heart Disease
3.1.4 Cerebrovascular Disease
3.1.9 All other spec. cardiovascular disorders
3.2.0 Chronic Obstructive Pulmonary Disease
3.3.0 Unpecified liver diseases
3.3.1 Liver cirrhosis
3.3.9 All other specifed liver diseases
3.4.0 Acute abdominal conditions
3.4.9 All other specified acute abdominal conditions
3.5.0 Diabetes
3.6.0 Unspecified neoplasms
3.6.1 Carcinoma breast
3.6.2 Carcinoma cervix/uterus
3.6.3 Hepatoma
3.6.4 Carcinoma of gastrointestinal tract
3.6.5 Carcinoma of the lung
3.6.9 All other specified neoplasms
3.7.0 Renal disorders
3.7.9 Specified renal disorders
3.8.0 Central Nervous System disorders
3.8.1 Epilepsy
3.8.9 All other specified CNS disorders
3.9.0 All other specified noncommunicable diseases
4.1.0 Anaemia
4.9.0 All other spec. symptoms, signs and syndromes
5.0.0 Unspecified external causes
5.1.0 Unspecified unintentional injuries
5.1.1 Road traffic accident
5.1.2 Accidental poisoning
5.1.3 Other specified unintentional injuries
5.2.0 Intentional injuries
5.2.1 Homicidal injuries
5.2.2 Suicidal injuries
6.0.0 Undetermined

Intervention Addressable

Cause of Death	Under 5	Over 5
1.0.0 Unspecified communicable diseases	Intervention Available	Intervention Available
1.1.0 Unspec. Acute febrile illness	Intervention Available	Intervention Available
1.1.1 Malaria	Intervention Available	Intervention Available
1.1.2 Meningitis	Intervention Available	Intervention Available
1.1.9 All other spec. acute febrile illness	Intervention Available	Intervention Available
1.2.0 Unspecified Acute Respiratory infections	Intervention Available	Intervention Available
1.2.1 Pneumonia	Intervention Available	Intervention Available
1.2.9 All other specified acute respiratory infections	Intervention Available	Intervention Available
1.3.0 Hepatitis	Intervention Available	Intervention Available
1.4.0 Unspecified TB/AIDS	Intervention Available	Intervention Available
1.4.1 Pulmonary Tuberculosis	Intervention Available	Intervention Available
1.4.2 AIDS	Intervention Available	Intervention Available
1.4.3 AIDS + Pulmonary Tuberculosis	Intervention Available	Intervention Available
1.4.9 All other forms of tuberculosis	Intervention Available	Intervention Available
1.5.0 Diarrhoeal diseases	Intervention Available	Intervention Available
1.5.9 All other specified diarrhoeal diseases	Intervention Available	Intervention Available
1.6.0 Tetanus	Intervention Available	Intervention Available
1.7.0 Rabies	Intervention Available	Intervention Available
1.9.0 All other spec. communicable diseases	Intervention Available	Intervention Available
10.0.0 Still Birth	Intervention Available	Intervention Available
11.0.0 Birth injury and/or asphyxia	Intervention Available	Intervention Available
12.0.0 Prematurity and/or low birth weight	Intervention Available	Intervention Available
13.0.0 Congenital abnormalities	Intervention Available	Intervention Available

14.0.0 All other perinatal causes	Intervention Available	Intervention Available
15.0.0 Neonatal tetanus	Intervention Available	Intervention Available
18.0.0 Malnutrition	Intervention Available	Intervention Available
19.0.0 Measles	Intervention Available	Intervention Available
2.0.0 Unspec. direct maternal causes	Intervention Available	Intervention Available
2.1.0 Abortion	Intervention Available	Intervention Available
2.1.9 Specified Abortion	Intervention Available	Intervention Available
2.2.0 Eclampsia	Intervention Available	Intervention Available
2.3.0 Ante/postpartum haemorrhage	Intervention Available	Intervention Available
2.3.9 Specified Ante/postpartum haemorrhage	Intervention Available	Intervention Available
2.4.0 Obstructed labour	Intervention Available	Intervention Available
2.5.0 Puerperal sepsis	Intervention Available	Intervention Available
2.9.0 Other spec. direct maternal causes	Intervention Available	Intervention Available
2.9.0 Other spec. direct maternal causes	Intervention Available	Intervention Available
20.0.0 All other specified diseases	No interventions	No interventions
3.0.0 Unspecified non-communicable causes	No interventions	No interventions
3.1.0 Unspecified cardiovascular disorders	No interventions	No interventions
3.1.1 Hypertension	Intervention Available	Intervention Available
3.1.2 Congestive Cardiac Failure	Intervention Available	Intervention Available
3.1.3 Ischaemic Heart Disease	Intervention Available	Intervention Available
3.1.4 Cerebrovascular Disease	Intervention Available	Intervention Available
3.1.9 All other spec. cardiovascular disorders	Intervention Available	Intervention Available
3.2.0 Chronic Obstructive Pulmonary Disease	Intervention Available	Intervention Available
3.3.0 Unpecified liver diseases	No interventions	No interventions
3.3.1 Liver cirrhosis	Intervention Available	Intervention Available
3.3.9 All other specifed liver diseases	No interventions	No interventions
3.4.0 Acute abdominal conditions	No interventions	No interventions
3.4.9 All other specified acute abdominal conditions	No interventions	No interventions
3.5.0 Diabetes	No interventions	No interventions
3.6.0 Unspecified neoplasms	No interventions	No interventions
3.6.1 Carcinoma breast	No interventions	No interventions
3.6.2 Carcinoma cervix/uterus	Intervention Available	Intervention Available
3.6.3 Hepatoma	No interventions	Intervention Available
3.6.4 Carcinoma of gastrointestinal tract	No interventions	No interventions
3.6.5 Carcinoma of the lung	Intervention Available	Intervention Available
3.6.9 All other specified neoplasms	No interventions	No interventions
3.7.0 Renal disorders	No interventions	No interventions
3.7.9 Specified renal disorders	No interventions	No interventions
3.8.0 Central Nervous System disorders	No interventions	No interventions
3.8.1 Epilepsy	Intervention Available	Intervention Available
3.8.9 All other specified CNS disorders	No interventions	No interventions
3.9.0 All other specified noncommunicable diseases	No interventions	No interventions
4.1.0 Anaemia	Intervention Available	Intervention Available
4.9.0 All other spec. symptoms, signs and syndromes	No interventions	No interventions
5.0.0 Unspecified external causes	Intervention Available	Intervention Available
5.1.0 Unspecified unintentional injuries	Intervention Available	Intervention Available
5.1.1 Road traffic accident	Intervention Available	Intervention Available
5.1.2 Accidental poisoning	Intervention Available	Intervention Available
5.1.3 Other specified unintentional injuries	Intervention Available	Intervention Available
5.2.0 Intentional injuries	Intervention Available	Intervention Available
5.2.1 Homicidal injuries	Intervention Available	Intervention Available
5.2.2 Suicidal injuries	Intervention Available	Intervention Available
6.0.0 Undetermined	No interventions	No interventions

Cause of Death	Malaria / AFI Women 15 49 Years
1.0.0 Unspecified communicable diseases	
1.1.0 Unspec. Acute febrile illness	Malaria / AFI (Women 15-49)
1.1.1 Malaria	Malaria / AFI (Women 15-49)
1.1.2 Meningitis	Malaria / AFI (Women 15-49)
1.1.9 All other spec. acute febrile illness	Malaria / AFI (Women 15-49)
1.2.0 Unspecified Acute Respiratory infections	
1.2.1 Pneumonia	
1.2.9 All other specified acute respiratory infections	
1.3.0 Hepatitis	
1.4.0 Unspecified TB/AIDS	
1.4.1 Pulmonary Tuberculosis	

1.4.2 AIDS
1.4.3 AIDS + Pulmonary Tuberculosis
1.4.9 All other forms of tuberculosis
1.5.0 Diarrhoeal diseases
1.5.9 All other specified diarrhoeal diseases
1.6.0 Tetanus
1.7.0 Rabies
1.9.0 All other spec. communicable diseases
10.0.0 Still Birth
11.0.0 Birth injury and/or asphyxia
12.0.0 Prematurity and/or low birth weight
13.0.0 Congenital abnormalities
14.0.0 All other perinatal causes
15.0.0 Neonatal tetanus
18.0.0 Malnutrition
19.0.0 Measles
2.0.0 Unspec. direct maternal causes
2.1.0 Abortion
2.1.9 Specified Abortion
2.2.0 Eclampsia
2.3.0 Ante/postpartum haemorrhage
2.3.9 Specified Ante/postpartum haemorrhage
2.4.0 Obstructed labour
2.5.0 Puerperal sepsis
2.9.0 Other spec. direct maternal causes
2.9.0 Other spec. direct maternal causes
20.0.0 All other specified diseases
3.0.0 Unspecified non-communicable causes
3.1.0 Unspecified cardiovascular disorders
3.1.1 Hypertension
3.1.2 Congestive Cardiac Failure
3.1.3 Ischaemic Heart Disease
3.1.4 Cerebrovascular Disease
3.1.9 All other spec. cardiovascular disorders
3.2.0 Chronic Obstructive Pulmonary Disease
3.3.0 Unpecified liver diseases
3.3.1 Liver cirrhosis
3.3.9 All other specifed liver diseases
3.4.0 Acute abdominal conditions
3.4.9 All other specified acute abdominal conditions
3.5.0 Diabetes
3.6.0 Unspecified neoplasms
3.6.1 Carcinoma breast
3.6.2 Carcinoma cervix/uterus
3.6.3 Hepatoma
3.6.4 Carcinoma of gastrointestinal tract
3.6.5 Carcinoma of the lung
3.6.9 All other specified neoplasms
3.7.0 Renal disorders
3.7.9 Specified renal disorders
3.8.0 Central Nervous System disorders
3.8.1 Epilepsy
3.8.9 All other specified CNS disorders
3.9.0 All other specified noncommunicable diseases
4.1.0 Anaemia
4.9.0 All other spec. symptoms, signs and syndromes
5.0.0 Unspecified external causes
5.1.0 Unspecified unintentional injuries
5.1.1 Road traffic accident
5.1.2 Accidental poisoning
5.1.3 Other specified unintentional injuries
5.2.0 Intentional injuries
5.2.1 Homicidal injuries
5.2.2 Suicidal injuries
6.0.0 Undetermined

Notes

[1] The Adult Morbidity and Mortality Project, Phase 2 (AMMP-2) is a project of the Tanzanian Ministry of Health, funded by the UK Department for International Development and implemented in partnership with the University of Newcastle upon Tyne.

[2] The Tanzania Essential Health Interventions Project (TEHIP) is funded in part by a grant from the International Development Research Centre, Canada (IDRC) and implemented in collaboration with the Tanzania Ministry of Health.

[3] Since premature mortality represents almost 80% of the expected burden of disease in sub-Saharan Africa as estimated by the Disability Adjusted Life Year (DALY), the Burden of Disease Profile uses the mortality portion of the DALY (future years of life lost due to mortality or YLLs) as a proxy measure of the distribution of the burden of disease. All graphics showing the shares of the burden of disease are based on YLLs. These YLLs use standard DALY age weighting and discounting. Cause specific mortality and associated YLLs are generated through continuous, direct, demographic surveillance in Morogoro District, Hai District, and Ilala and Temeke Municipalities by the NSS using AMMP verbal autopsy classification.

[4] The methods for calculating YLLs used in this study are the same as for the Global Burden of Disease 1990 study. Details can be found in: Murray CJL, Lopez AD, eds. *The Global Burden of Disease*. Boston: The Harvard School of Public Health on behalf of the World Health Organization and the World Bank, 1996.